

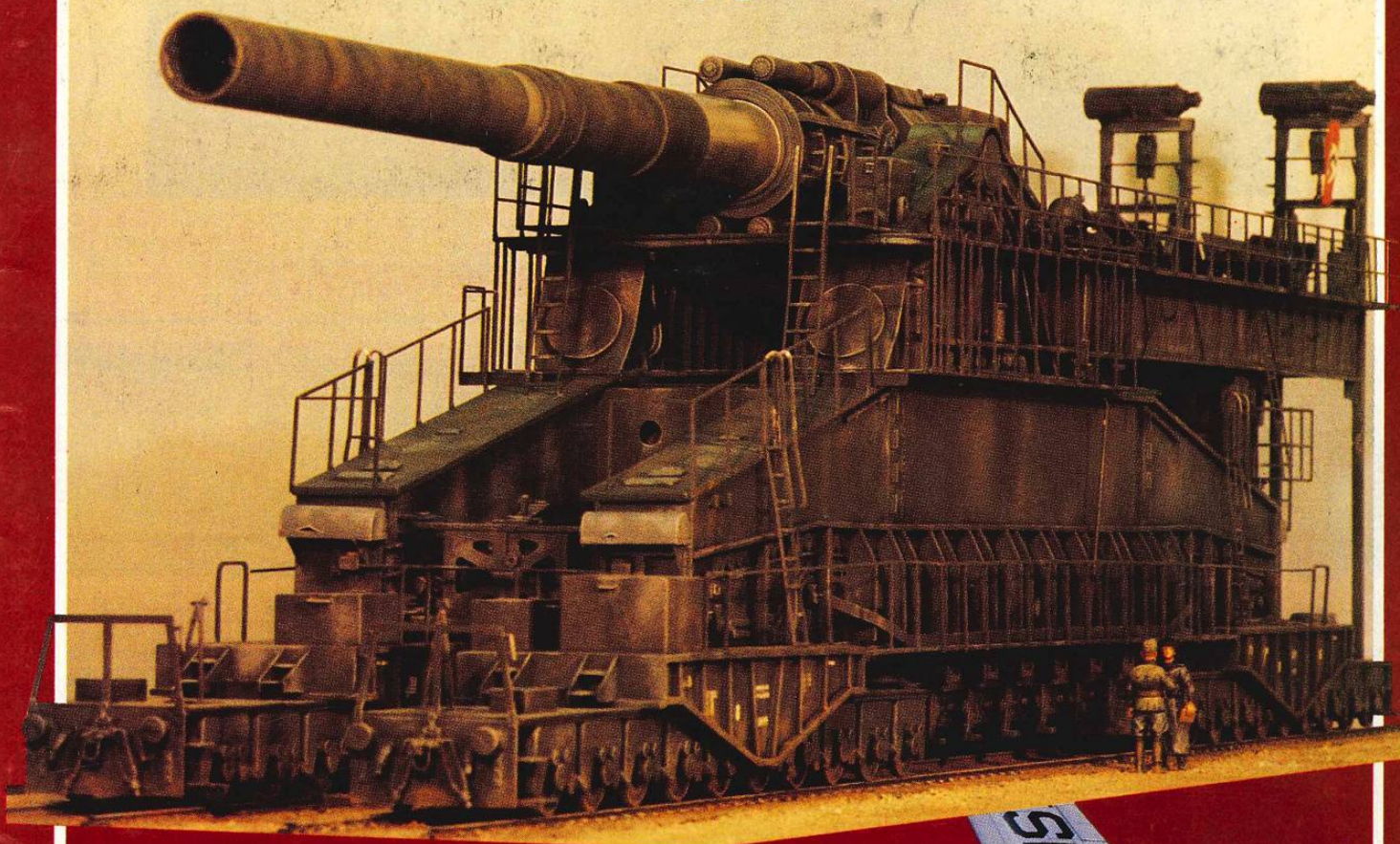
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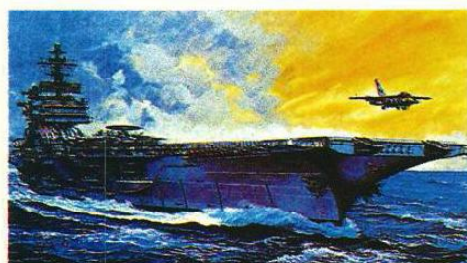
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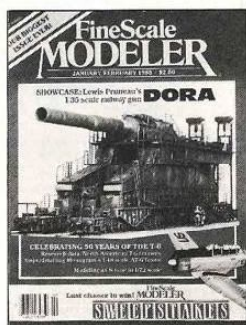
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## ON THE COVER

Most of us are fascinated by the superlative side of life — the biggest, fastest, longest, tallest, and so forth in any given category. Lewis Pruneau was more than fascinated, and he decided to model the biggest gun ever — Germany's 800 mm railway gun — in a scale big enough to include every detail — 1/35. The 44"-long result is indeed superlative, and you'll find more photos on pages 58 and 59. We're also dedicating 17 pages to celebrate 50 years of flight for the T-6, and those articles, one on detailing and one on the real thing, start on pages 22 and 40. Photo by Mark Hughes, T-6 painting by Ken Sommerfield.



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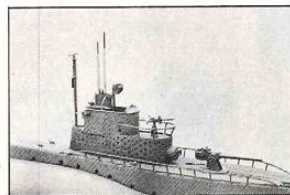
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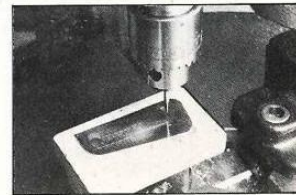
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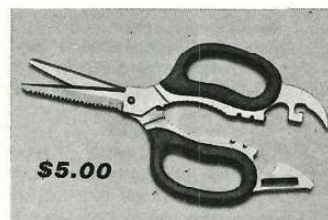
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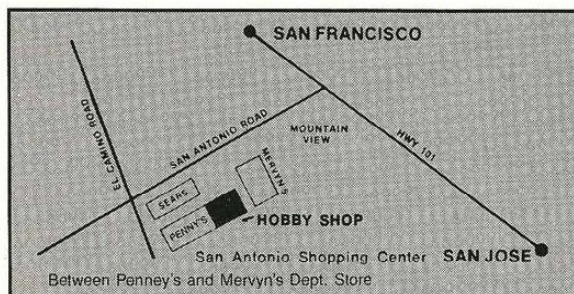
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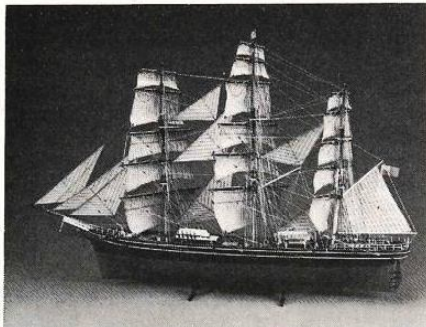


## FSM UPDATE

FSM invites manufacturers and publishers to submit news releases, photos, product samples, and new catalogs. A description of our new-product announcement and review policies is available from FSM Update, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233.

**Kit releases.** Accu-Scale Decals: Plus, 3 Clayton Avenue, Medford, MA 02155, has introduced vacuum-formed kit No. VJ-2, a 1/32 Ohka Model 22, \$7.50. Add 20 percent for postage.

New from Altech Marketing, Inc., P. O. Box 286, Fords, NJ 08863, is the Billings



line of wooden and ABS plastic boat kits. Woods such as mahogany, obeche, and pine are used, and the kits include brass fittings.

Available from C. A. Atkins, 17 Ashbourne Avenue, Bridlington, North Humberside YO16 4PE, England, are three 1/72 white-metal aircraft kits: Fokker D.VIII, £7.50; D. H.88 Comet, £12.95; and Messerschmitt Bf 109R (Me 209V-I), £7.00. Add 50 pence per kit for surface mail, except 75 pence for the Comet. For airmail, add 20 percent for one kit, 10 percent for two or more. Payment should be by International Money Order in pounds sterling.

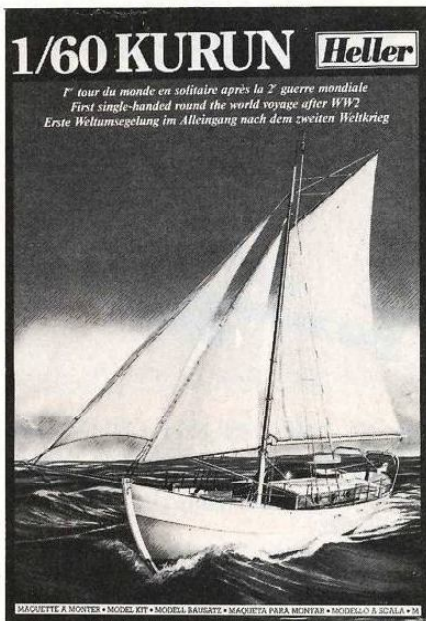
Garrick Leisure Consultants, 61 Queen's



Road, Thames Ditton, Surrey KT7 0QY, England, sells white-metal model kits of British buses in 4 mm to 1 foot scale.

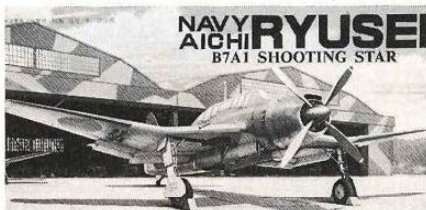
Heller, 24, rue de Paradis, 75010 Paris, France, has announced the following 1/24 releases: No. 728, Citroën B14 Landaulet taxi; 80746, Porsche 917K; 80747, Ferrari 512S; 80748, Brabham BT33; and 80749, Lotus 49B. Other new releases include 301, 1/72 Lockheed T-33 Thunderbird; 360, 1/72 AMD Super Etendard; 614, 1/60 Kurun; 616, 1/150 Corsair; 625, 1/200 car ferry Avenir; 955, 1/8 BMW 100RT Gendarmier motorcycle; 3504, 1/43 Wabco dumper; and

3505, 1/43 Wabco mechanical digger. Heller also has added seven Cliclac (snap-fit) kits to its line: 2016, Land Rover ambulance; 2019, Volvo N12 Béton; 2028, Kawasaki 1300 racing motorcycle; 2031, Dauphin "as-



sistance" helicopter; 2032, Audi Quattro "San Remo"; 2033, Audi Quattro "Polizei"; and 2034, Audi Quattro "Africa Rallye."

A new Fujimi kit available from Hikosen, 68 Tamchi, Taira, Iwaki-Shi, 970, Japan, is



No. 7AF1-800, a 1/72 Japanese Navy B7A1 Shooting Star. It sells for 800 yen.

Lee Town Model Service, Inc., 21 Adams Street, Belvidere, NJ 07823, offers a 1/87 cast-metal kit of a Pierce 2,500-gallon fire department tanker truck on a Ford LST

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chassis. It is product No. 432-7037 and sells for \$27.95.

Model Rectifier Corporation 2500 Woodbridge Avenue, P. O. Box 267, Edison, NJ 08817, has added three Tamiya kits to its



line: No. 2448, 1/24 Morris Mini Cooper 1275S Rally sports car; 3630, 1/35 M151A2 Fort Mutt with M416 1/4-ton cargo trailer; and 7305, 1/350 battleship U. S. S. *New Jersey* (BB-62).

Recent releases from Monogram Models, Inc., 8601 Waukegan Road, Morton Grove, IL 60053-2295, are No. 1408, 1/24 Snap Tite Barbie Corvette; 2208, 1/24 1968 Pontiac GTO street machine; 2213, 1/24 1971 Plymouth Satellite; 2224, 1/24 1985 Pontiac



Trans Am; 2608, 1/8 1985 Corvette Coupe; 2418, 1/24 Ford "Krusher" pickup; 2419, 1/24 "Quadzilla" pickup; and 6419, 1/144 U. S./Soviet Union strategic missile display. Also new from Monogram are licensed variations of the Tonka "Gobots" series: No. 6066, Blaster; 6067, Buggyman; 6068, Royal-T; 6069, Turbo; 6202, Cy-Kill; and 6203, Leader-1.

Pegasus Models, Strebor House, Thurston Park, Whitstable, Kent CT5 1RE, England, has introduced three 1/72 aircraft kits: No. 011, Curtiss F9C-2 Sparrowhawk; 012, Fw 44J "Stieglitz"; and 013, Bristol M.1C. Each kit sells for \$7.00.

Revell, Incorporated, 4223 Glencoe Avenue, Venice, CA 90292, has added six Robotech Defenders kits to its line: No. 1191, armored combat team; 1192, strike force; 1193, assault squad; 1194, robot recovery unit; 1197, airborne attackers; and 1199, commando. All are 1/72, except for 1199, which is 1/48. Also new from Revell are 4530, 1/48 F/A-18 Hornet with stores; 4752, 1/144 C-5B Galaxy; and 8813, 1/200 bucket wheel excavator.

Available from Staubitz of Buffalo, 105 Hollybrook Drive, Williamsville, NJ 14221, is a 1/32 World War Two U. S. Navy 26' whaleboat, No. 26/32. The kit has a vacuum-formed hull, insert with seats, motor cowl, and canopy. It sells for \$14.95 plus \$1.40 for postage.

Welsh Models, Hillside Cottage, Leckwith Hill, Nr. Cardiff CF1 8AS, United Kingdom, sells 1/144 vacuum-formed kits of the Royal Air Force and Fleet Air Arm and Navy from 1950 to the present. When writing for a price list, enclose two International Reply Coupons.

**Decals.** A recent release from Accu-Scale Decals: Plus, 3 Clayton Avenue, Medford, MA 02155, is decal set No. AD-2, 1/32 Luftwaffe letters and numbers, \$17.50. Each set contains six 8 1/2" x 11" sheets in yellow, blue, green, red, black, and white. Set AD-3 is the same as AD-2, except in 1/48. Add 20 percent for shipping.

New from Aeolus Publishing Limited, P. O. Box 2643, Vista, CA 92083, are Detail & Scale 1/48 decal sheet Nos. 0648 and 0748, \$3.50 each plus 35 cents for postage. The F-15 Eagle, 33rd TFW, is the subject of 0648. It includes markings for three F-15As and one F-15B. Number 0748 is for the F-4 Phantom II, U. S. Navy special markings, and includes markings for the twentieth anniversary Phantom (VF-74), "White Bunny" (VX-4), and a MiG killer (VF-301).

Croydon Impex, 6 Waid Terrace, Farm Road, Anstruther, Fife KY10 3EZ, Scotland, is selling 1/48 Roodecals for the Australian Aermacchi MB326, product No. A24, £3.10 plus 35 pence per order for surface mail or 50 pence for airmail. Add 50 pence for bank charges if paying in U. S. currency.

Sixteen new Microscale decal sheets are available from Krasel Industries Inc., 919 Sunset Drive, Costa Mesa, CA 92627. Markings for the Airfix 1/72 Grumman Duck are the subjects of sheet Nos. 72-448 and 72-449. Sheet 72-450 includes markings for two FB-111As from the 509th Bomb Wing and an F-111E from the 20th Tactical Fighter Wing. Prototype and service EF-111A Ravens are featured on sheet 72-451. Stenciling for all versions of the F-111 is included on sheet 72-452. Colorful Israeli and Dutch F-16s are the subjects of sheet 72-453, while sheets 72-454 and 72-455 have markings for current U. S. Air Force F-16s.

Microscale's 1/48 decal line is expanded with sheet No. 48-223 on U. S. A. F. CH-53C and HH-53C Super Jolly helicopters, while sheet 48-224 has markings for Navy and Marines RH-53D and CH-53D Sea Stallions. Sheet 48-225 has markings for Intrud-



ers of VA-65 and VA-52. Two U.S.A.F. F-100D Super Sabers are featured on sheet 48-226. Markings for Dutch and Israeli F-16 Fighting Falcons are on sheet 48-227. Two S.A.C. FB-111As of the 509th Bomb Wing are the subject of sheet 48-228, while sheet 48-229 has F-111 stenciling. Sheet 48-230 includes markings for U.S.A.F. and Air National Guard F-16s.

A full range of Roodecalcs is available from PJ's Hobbyworld, 33 Holmes Road, Moonee Ponds, Australia 3039.

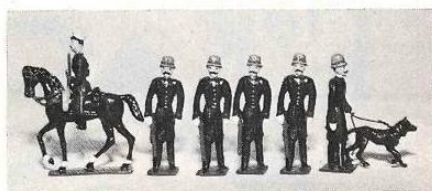
Woodland Scenics, P.O. Box 98, Linn Creek, MO 65052, now offers 16 sets of dry-transfer sheets. New releases include No. DT 502, Beton & Windsor letters and numbers in full color, \$2.98; DT 506, white Railroad Roman letters and numbers, \$2.98; DT 508, black Railroad Gothic letters and numbers, \$2.98; DT 551, full-color tavern, gas station, and commercial signs, \$4.98; DT 554, full-color product and advertising signs, \$4.98; and DT 555, full-color road, product, and Burma Shave signs, \$4.98.

**Figures.** Three new figures are available from Benassi's Choice, 55 St. Mungo Avenue, Glasgow G4 OPL, Scotland: No. 54/3, 54 mm Italian cavalry officer (Savoy Dragoons Regiment), Russian front, 1941-1942; 54/4, 54 mm European medieval man-at-arms (a pikeman), circa 1450; and 80/25, 80 mm Etruscan warrior (heavy infantryman), circa 350 BC.

New from Grenadier Models Inc., P.O. Box 305, Springfield, PA 19064, are "war-bots," metal robot miniatures for gaming and collecting. Each of the first two sets in the series, Nos. 4501 and 4502, will feature five large robots with interchangeable parts and will retail for \$7.00.

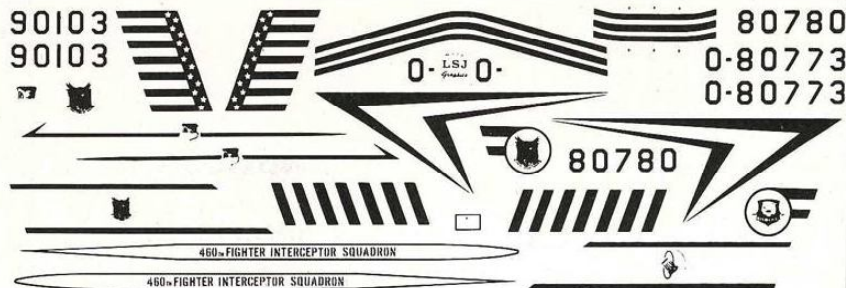
Imrie/Risley Miniatures, Inc., P.O. Box 89, Burnt Hills, NY 12027, has introduced three new 54 mm figures: No. C-114, King Arthur; C-115 Queen Guinevere; and C-116, Scrooge. Each sells for \$5.95.

Limited Edition Miniatures, 505 Fifth Avenue, Suite 1602, New York, NY 10017, produces toy soldier sets. Included in the



Gay Nineties Policemen set are four walking patrolmen, a policeman with a dog, and a mounted officer. A Civil War set features the color guard of the Eighth Wisconsin Volunteer Infantry and the regiment's eagle mascot, Old Abe, on his American shield perch. The third set available is a representation of the 369th U.S. Infantry Regiment, "Harlem's Own," from World War One. This set includes five marching infantrymen in a mixture of French and American uniforms and an officer in regulation dress.

Modelers Mart, 2071 Range Road, Clearwater, FL 33575, has announced that it has been granted the exclusive U.S. distributorship for Lamming Miniatures. More than 600 figures are available. Prices for foot figures are 65 cents apiece or \$3.50 for a pack of six; cavalry figures sell for \$1.40 apiece or \$4.00 for a pack of three.



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- 0448 — F-106 Delta Darts, 48th FIS, 1/48 scale
- 0548 — F-106 Delta Darts, Active Air Force Units, 1/48 scale
- 0648 — F-4 Phantom 11s (Special U.S. Navy Markings — White Bunny of VX-4 and MIG Killer of VF-301.) 1/48 scale
- 0748 — F-15 Eagle 33rd TFW (3F-15As, 1F-15B) 1/48 scale
- 0272 — F-14 Tomcat (Su-22 Killers) 1/72 scale

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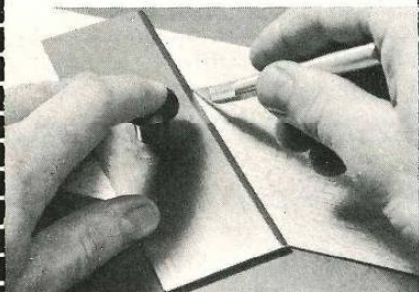


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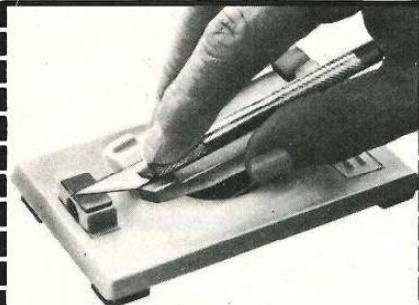
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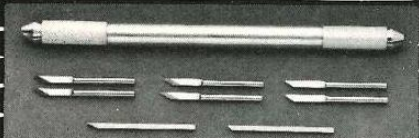
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**SEND TO:** Micro-Mark, P.O. Box 5112RN  
24 E. Main St., Clinton, NJ 08809.

Every item guaranteed 100%.  
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Eleven new releases are available in the "Outcasts" series from Rafm Company Inc., 19 Concession Street, Cambridge, ON, Canada N1R 2G6: OC-1, Lord Gort; OC-2, the Vicar; OC-3, Scary Mary; OC-4, Yob the Faceless One; OC-5, Digger the Thief; OC-6, Pinhead the Assassin; OC-7, Scags; OC-8, Pinky the Eunuch; OC-9, Majuba Sunshine; OC-10, Pongo Gutbag on Litter of Doom; and OC-11, Outcasts Blade Chariot. Each is \$1.00, except for OC-10, \$6.00, and OC-11, \$7.00.

New 90 mm figures from Series 77 Miniatures, 7861 Alabama Avenue, No. 14, Canoga Park, CA 91304, are No. A/39, Young Eagle, Plains Indian, 1870-1880; A/40, Lance Rimmer, bounty hunter, 1880; A/41, G. Eugene Boone, U. S. Navy seaman, 1941-1945; A/42, Running Buffalo, Plains Indian, 1870-1880; A/43, western gambler; and A/44, U. S. Marine, Korea. Each sells for \$22.95 except A/41, which is \$25.95.

"Valley Forge," a 100 mm figure of a freezing Continental soldier by sculptor Jim



Wildt, has been released by Standard Bearer Miniatures, 3451 Plainfield Avenue North-east, Suite 171, Grand Rapids, MI 49505. This is the first of a series of North American military figures. All figures will include background histories, detail information, and color notes.

### Accessories and diorama materials.

Bowman Manufacturing, 743 Harvard Avenue, St. Louis, MO 63130, has introduced a 40 mm WWI trench with soldiers, HO (1/87) scale city facade with blue skies, and 54 mm Sahara fortress, all on card stock. Postpaid prices per sheet are \$1.50 for the trench, \$4.50 for the city facade, and \$6.00 for the Sahara fortress.

Crummy Products, 6020 Jessamine, No.

206, Houston, TX 77081, has added 1/4"-thick, detailed plaster castings of stonework (usable in any scale) to its line. A sampler set, No. 510, sells for \$3.50 plus \$2.00 for postage.

Display cases with inside dimensions ranging from 8" x 8" x 8" to 12" x 12" x 24" are available from San Francisco Seamaster, 8455 West Mercer Way, Mercer Island, WA 98040. Each case has an acrylic lacquered brass frame with a high-gloss black acrylic base.

**Tools.** New from BenchMark Tool Company, P. O. Box 357, Jefferson City, MO 65102, is the Shopcraft 10" deluxe variable-speed band saw. The suggested retail price in hardware and home center stores is \$199.99.



Black & Decker, 701 East Joppa Road, Towson, MD 21204, has introduced a line of precision power tools. The line consists of 14 tools and kits and more than 100 accessories including model No. 9416, Rotary Hobby Shop (above); 9804, 100-watt deluxe high-speed rotary tool kit; 9805, 150-watt deluxe



high-speed rotary tool kit; 9806, precision detailing tool kit (above); 9817, precision jigsaw; 9818, 3" disc sander; and 9819, orbital pad sander.

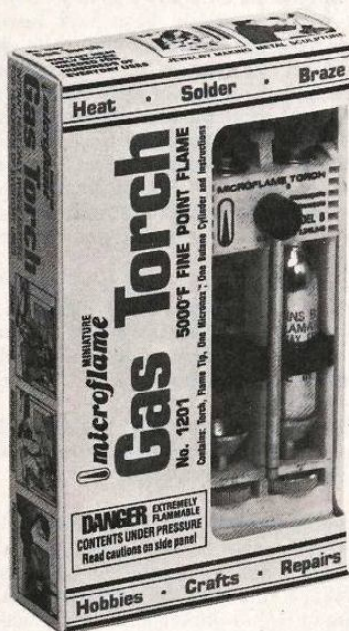
Freedom Electric Company, P. O. Box 262, Bethel, CT 06801, is selling a maintenance kit for all Freedom flexible shaft machines. Included in the kit are a spare flexible shaft, pair of motor brushes, hypodermic syringe of oil for motor maintenance, tube of high-temperature grease for shaft maintenance, and operation and maintenance instructions.



Formadent, Inc., P. O. Box 647, Alexandria, VA 22313, sells the Miniflam GP small soldering torch, No. MFT-07. The flame is adjustable up to 1,600° C, and the temperature can be increased to 2,750° C by fixing the Oxy-Gas adaptor to Miniflam oxygen cartridges. The suggested retail price is \$19.95.

Hobby Products Company, P. O. Box 07846, Columbus, OH 43207, has added the Playmat, No. 901100, to its line. When assembled the Playmat can be used for turning, drilling, or sanding wood. It is priced at \$59.95; add \$4.00 if ordering directly from Hobby Products Company. The 6-volt transformer, which normally sells for \$29.95, is included with the price of the Playmat until December 31, 1984. Write to Hobby Products Company for a complete catalog.

The Duplicator MKI, an adjustable hand sander, is available from the Eldon J. Lind Company, 2912 Walker Lee, Los Alamitos, CA 90720. It is designed to copy and retain patterns. The standard package sells for \$19.95 and includes seven patterns and approximately 35" of adhesive-backed sandpaper. The deluxe package, \$49.95, includes 44 patterns, a plastic gauge for accuracy in selecting a pattern, and 6' of adhesive-backed sandpaper.



Microflame, Inc., 3724 Oregon Avenue South, Minneapolis, MN 55426, has introduced an economy torch set, No. 1201, \$19.95. Each set contains a miniature gas torch, micronox and butane cylinder, flame tip, and instructions.

Available from Model Expo, Inc., 23 Just Road, Fairfield, NJ 07007, is a set of rigging rods for ship modelers, product No. MPS60. The rods help modelers reach any part of the rigging without getting their hands tangled in the lines. The set, which includes six different shapes, sells for \$22.95, plus \$2.50 for postage.

Paasche Airbrush Co., 7440 West Lawrence Avenue, Harwood Heights, IL 60656, has added two Excel airbrush sets to its line. The suggested retail price of set No. V-

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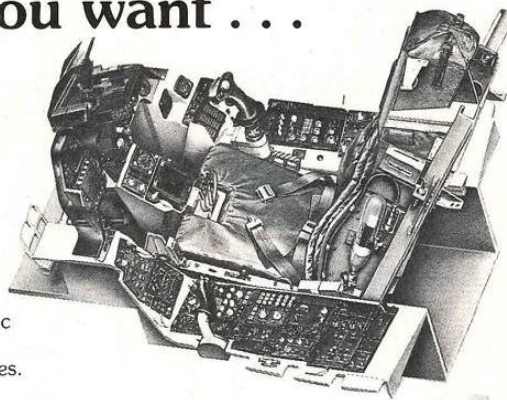
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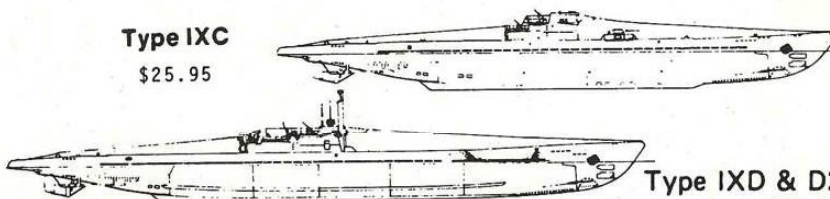
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Vol. 5 No. 1 "Sub Special" Part 1  
\$3.50 includes a list of all Combat Models kits. Price list alone 50¢



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U. S. Orders to continental states shipped UPS.

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January/February 1985

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XL80#1 is \$94.00. Set No. VL-XL80#1 sells for \$89.95.

**Catalogs.** Send \$2.00 to receive the October 1984 mail order catalog from Hannant's, 56 London Road North, Lowestoft, Suffolk NR32 1EP, England. It includes listings for kits, decals, paints, and books.

A new catalog of metal figures from Historex Agents, 3 Castle Street, Dover, Kent CT16 1QJ, England, costs \$4.20 for surface mail or \$5.75 for airmail. Included are listings for Almond, Barton, Chota Sahib, Grieve, and Sovereign.

Micro-Mark's 48-page 1985 catalog lists more than 1,000 tools. For a copy, send \$1.00 to Micro-Mark Catalog, Box 5112, 24 East Main Street, Clinton, NJ 08809.

R. V. F., P. O. Box 107, Burbank, CA 91503, has released its August 1984 catalog and price list. It sells for 50 cents and lists kits and decals.

For a catalog listing full-color aircraft Foto-Paaks and scale three-view drawings, send \$2.00 and a stamped, self-addressed envelope to Scale Model Research, 418 East Oceanfront, B, Newport Beach, CA 92661.

Squadron Mail Order's 64-page winter 1984-1985 catalog, No. 44, is available for \$2.50 from 1115 Crowley Drive, Carrollton, TX 75011-5010.

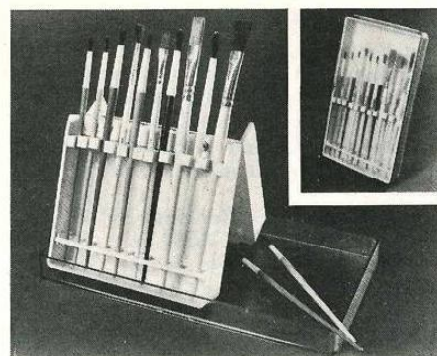
**Miscellaneous.** Available from Airknock-er Things Sales Co., P. O. Box 421, Buckeye Lake, OH 43008-0421, is .004"-diameter stainless steel wire. It sells for \$1.00 per yard, with a minimum order of two yards; add 25 cents for postage outside North America. The wire is suitable for simulating brace wire on 1/48 or 1/72 aircraft models, making railings and riggings on ship models, or lanyards on hood safety pins on car models.

The Buckle Connection, 21323 Pacific Coast Highway, Malibu, CA 90265, sells hand silk-screened T-shirts showing military aircraft from WWII to the present. The shirts, available in adult sizes small through extra large, sell for \$8.95 each, including postage.

One pint of Paint Strip paint and lettering remover for plastic models sells for \$8.75. It is manufactured by Custom Car Engineering, RD1, Box 199C, Creamridge, NJ 08514. The firm states that Paint Strip provides complete removal and washes off a model with soap and water, leaving no residue.

Datak Corporation, 65 71st Street, Guttenberg, NJ 07093, produces Tinnit, No. ER-18, which was designed to plate bare copper circuit boards but also can be used for general cosmetic plating. It is supplied in a 600-square-inch (one pint) size for \$3.50.

Available from DEElightful Designs, Inc., 5042 Linda Street, Venice, FL 33595, is the



Brush Traveler, a 5 1/4" x 9" x 1" carrying case for paintbrushes. The case has a thermoplastic cover, brass hinges, and rubber grippers to keep the brushes from being damaged during storage or transit.

GA.RE. Model s. n. c., P. O. Box 4233, Rome 00182, Italy, sells styrene sheet in four thicknesses: .25 mm, .50 mm, 1 mm, and 1.5 mm. Send \$2.00 for a complete catalog, which includes kits, figures, paints, decals, and books.

Osprey Publishing Limited, 12/14 Long Acre, London WC2E 9LP, England, has announced its new *Elite* series, featuring information on the history and appearance of the world's fighting men. Subjects chosen will complement Osprey's *Men at Arms* series. Each soft-cover book will have 64 pages, more than 40 black-and-white photographs, and 12 pages of full-color artwork.

The Scale-Tech line of scale aircraft drawings is now available from Repla-Tech International, 48500 McKenzie Highway, Vida, OR 97488. Each sheet is 11" x 17" and sells for \$2.00. Many are British *Aviation News* drawings, while others are from draftsmen such as Björn Karlström and Robert C. Morrison.

Twentieth Century Imports, 4732 East Pearl, P. O. Drawer 3348, Boulder, CO 80303, will be publishing a new magazine, *Max Hobby Quarterly*, which will highlight Japanese science-fiction kits. The cover price is \$3.95.

*Wargamer's Digest*, 6711 Shamrock Glen Circle, Middleton, WI 53562, has changed its name to *Military Digest*.

**Coming events.** The North Eastern Model Car Meet will be held January 6 at the VFW Hall, 513 Veterans Place, Hasbrouck Heights, New Jersey. It begins at 9 a.m.

Alamo Squadron is sponsoring Model Fiesta IV on January 26 at Wonderland Mall, Interstate 10, San Antonio, Texas. Entry fees are \$2.00 per model in the senior category and \$1.00 per model in the junior category. For more information, call Mike Derderian at (512) 656-2433 or Dick Montgomery at (512) 681-7945.

Noreastcon XIV, the IPMS Region 1 convention, will be held April 26 and 27 at the Sheraton Mansfield, exit 7A off I-95 North, Mansfield, Massachusetts. Send a stamped, self-addressed No. 10 envelope to Jim Guiney, 59 Summit Street, Arlington, MA 02174, for further information.

The Indianapolis Adam's Mark Hotel will be the site of the 1985 IPMS national convention, July 18-21. For more information write to IPMS Indianapolis, 1985 National Convention, P. O. Box 88295, Indianapolis, IN 46208.

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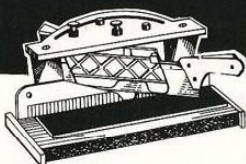


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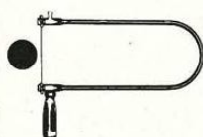
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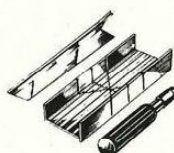
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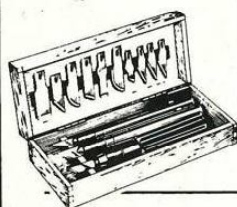
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Nos. 1, 2 and 5 knives, plus 10 assorted extra blades in a wooden chest.

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Wooden chest contains 2 large & 2 small plastic clamps, mitre box with razor saw blade, double end pin vise, 3 drill bits, Nos. 1 & 5 knives, sander and screwdriver.

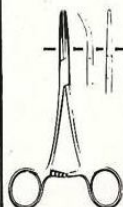
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**No. GYS1852 Adjustable Jeweler's Saw**

Adjustable steel frame fits blade lengths from 2" to 7 1/2". Throat 2 1/2" deep, adjustable blade position. Comes with 12 refill blades.

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High quality steel with specially tempered steel chuck. Free wheeling swivel head. Holds drills, taps, reamers, etc. up to 1/8". 4" long.

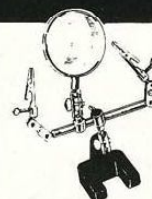
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Tough, lightweight sander, 4" long. Includes 5 sanding belts.

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Six different shapes packed in a plastic pouch. Each file is 5 1/2" long.

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**No. GYS1489 Mini-Rifflers - Set of 3**

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**No. GYS1748 / Bent Nose Locking Tweezer**

Precision bent nose tweezer has built in locking device with thumb release. Stainless steel, 6" long.

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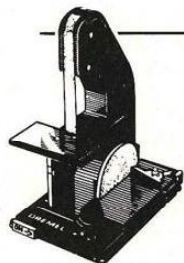


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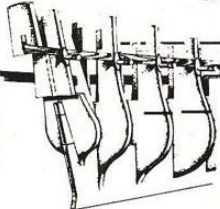
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Let us know what you think! Comments, suggestions, corrections, and additional information on FSM articles are welcome in this column. Letters submitted for publication should be clearly marked "To the Editor" on both the envelope and the letter, should be typed or hand-printed, and should be no more than 300 words long.

**The trouble with jerry cans.** I enjoy your magazine, especially the FSM Showcase articles. I consider myself an average modeler, but thanks to FSM my skills are rapidly improving. However, something in the September/October 1984 issue caught my eye. In Terry Sunday's "Detailing Tamiya's M5A1 Stuart Light Tank" article, the jerry cans on the rear of his tank have only two handles. In the books and magazines I have, all American jerry cans appear to have three handles. Is there a two-handled American jerry can, or is there a minor flaw in this detail?

Sean Mullin  
Newark, N. J.

[There is indeed a flaw: I failed to include a third, central handle on the gasoline can mounted on the back of my M5A1. Sean is quite right — GI gas cans, according to my references as well, had three handles. Hopefully other modelers will avoid such an error by either removing the two handles from Tamiya gas cans and adding three made

from stretched sprue, or by purchasing a Testors/Italeri gas can set which correctly models the cans with three handles (as well as a detailed cap). — Terry Sunday]

**Superdetailers heard from.** On behalf of the "superdetailers and converters" I'm replying to A. C. Birkbeck's letter in the November/December 1984 FSM. Mr. Birkbeck seems to feel that he speaks for the "average modeler" or "most modelers"; I wonder where he gets his information. According to the manufacturers a very large part of their sales go to youngsters who probably do not even know that FSM exists.

I'm afraid I do not agree with Mr. Birkbeck. The modeler that reads FSM is an interested modeler — a modeler who is interested in improving his craft. Even Mr. Birkbeck admits to wanting to improve his techniques, yet he wants to limit the degree to which it is done, a rather closed-minded approach.

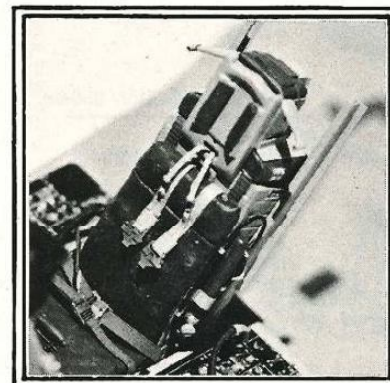
I see absolutely nothing wrong with FSM publishing the more elaborate modeling techniques. Often these are techniques that have taken a long time to develop, and I for one feel privileged when someone takes the time to share such information with me. Therein lies the key; in my experience the modelers that produce the best work are the ones who listen and remember. They ask pointed questions and try new techniques. That's why FSM is so valuable — it serves as a medium for the exchange of information at all levels of modeling skill.

Paul Budzik  
Fresno, Calif.

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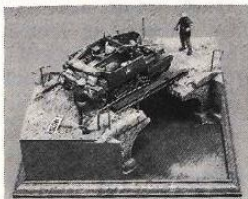




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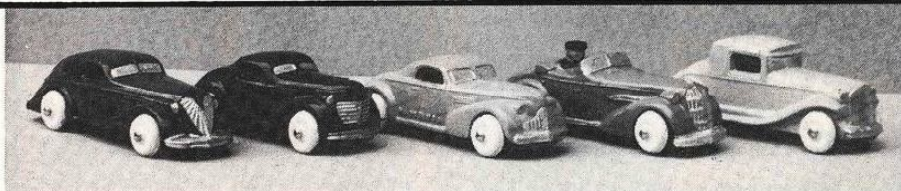
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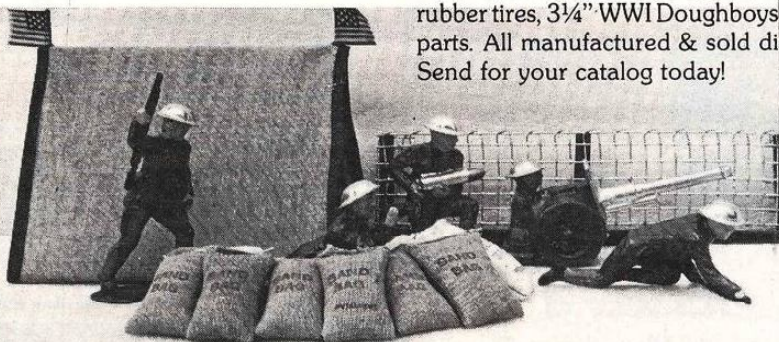
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**Computers heard from, too.** Just a note on the computer scale converter article in the November/December 1984 FSM. I changed a few lines of the program to make it compatible with my TRS-80 Color Computer, and it works like a champ. Thanks for adding another new idea to modeling and modeling magazines.

Larry I. Potoski  
Alexandria, Va.

**Ideas for American Dress and Detail.** I enjoy FSM's "American Dress and Detail" series, but I'm interested in more modern subjects. I'd like to see some modern U.S. infantry, perhaps Vietnam-era Marines and U.S. Army infantry, and maybe 82nd Airborne troopers as they appeared in Grenada.

One more suggestion: How about a page or two where modelers who aren't quite on the level of Shep Paine and Francois Verlinden can show photos of their work?

C. J. Virgo  
South Haven, Mich.

**Figure views and reviews.** I read with particular interest the "figure realism" letter from John Henry Sain [September/October 1984 FSM]. As a competitor for some years in the U.S., Canada, and Great Britain, I've had many discussions about this very subject.

I agree with Mr. Sain when he states that a figure done in high-contrast shading just doesn't look realistic. There are two principal reasons for this overstatement of color. One, it is a way to showcase the painter's skill of subtle blending of color edges, which is much more obvious in the heavy shading format than if one shades realistically. Two,

"proper" lighting is not always available at competitions, so the artist compensates for this by application of dramatic color, especially in smaller scale figures like 54 mm.

As a veteran who has been criticized for years for subdued or "less contrasting" highlights and shading, I can offer this advice: Stay with your theory and opinion and paint your figures the way they look best to you. Inevitably, well-painted figures, high-contrast or not, will be accepted and win awards. With all the truly fine, talented painters competing today, individuality and personal interpretation are rapidly becoming definite criteria in judging. Just go right ahead and develop yours the way your heart and eye tell you to.

Phil Bracco  
Weehawken, N. J.

I would like to clear up a couple of items concerning Peter Twist's Polish Winged Hussar figure (July/August 1984 FSM). First, the Polish Hussars of this period were heavy cavalymen, not light cavalymen as stated.

Second, the wings were attached (singularly or in pairs) to the backplate of the armor (as in the case with this figure) or sometimes the rear of the saddle, but not to the base of the lance.

Tony Bialas  
Chicago, Ill.

[And, there's at least one more error in that FSM Showcase; we managed to misspell Tony's last name. For that, we're sorry, and on all three counts we stand corrected. — Bob Hayden.]

I thoroughly enjoy your magazine and eagerly await the next issue. I wonder if you have given a thought to adding a miniature figure review column. Figure reviews would be a great help to those who do not live near large hobby stores and cannot see the figures for themselves.

Keep up the great work.

Peter E. McClure  
San Jose, Calif.

[I've considered adding a figure review department to FSM, Peter, but haven't done so — yet — for a couple of reasons. First, timely information on new figures is hard to come by; while a few figure manufacturers have been conscientious about sending us new product releases, many don't reply to our letters. The second reason is that as long as FSM is published only six times a year, we have to be careful about how much room we devote to material other than how-to-do-it modeling information. Once the magazine is published every month (there are as yet no plans afoot to do that), we'll be able to add many new and interesting things without subtracting from the space available for modeling articles. — B. H.]

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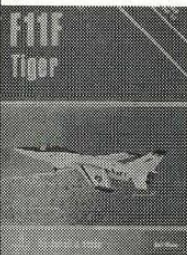


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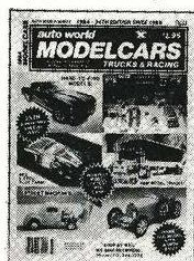
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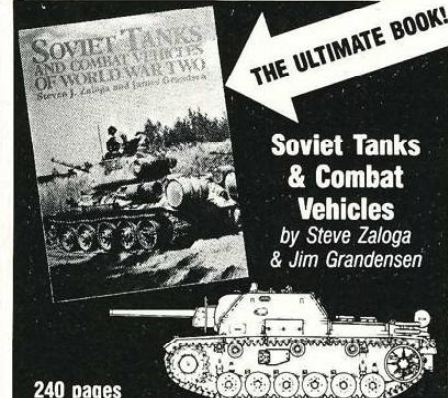
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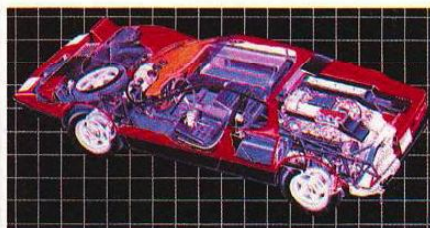
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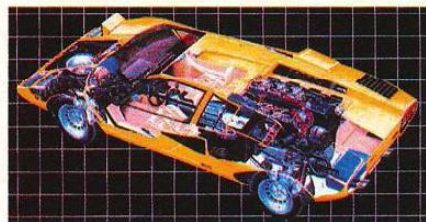
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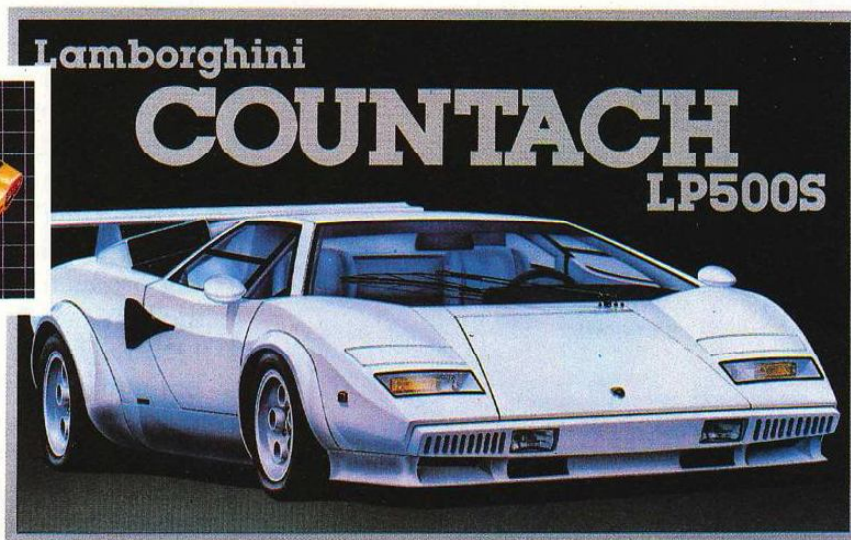
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**Kit:** No. 32-F9C, Curtiss F9C-1 Sparrowhawk  
**Scale:** 1/32  
**Manufacturer:** Williams Brothers Inc., 181 Pawnee St., San Marcos, CA 92069  
**Price:** \$9.95.

THE CURTISS SPARROWHAWK holds the distinction of being the only aircraft assigned to service aboard the "flying aircraft carriers," the airships U. S. S. *Akron* and *Macon*. In the early thirties, the airship was still considered a viable long-range weapon, and the need of a fighter escort to protect it presented a problem; no fighter aircraft could match its range. The solution of carrying its own escorts was novel and short-lived — the *Akron* crashed in 1933, the *Macon* in 1935. The concept of airship weapons faded away with the advent of high-speed, long-range bombers. Only eight Sparrowhawks were built.

The Sparrowhawk kit contains 79 styrene parts along with optional vinyl tires, clear



All photos, FINESCALE MODELER: A. L. Schmidt or Paul A. Erler unless otherwise credited.

acetate windscreen, and airfoil-shaped nylon monofilament for rigging. The easily understood instruction sheet includes 1/32 scale drawings, an exploded-view assembly diagram, brief history, color and markings synopsis, and blow-by-blow assembly directions.

The detail of the engine is good, but there is little cockpit detail — a disappointment for a kit in this scale. The engine mounts to the assembled fuselage but there is no fire wall. Due to the lack of locator pins and sockets, the kit was tricky to build. There was a lot of flash, which had to be trimmed away carefully around the forward fuselage

and upper wing fairings. The vinyl tires didn't fit into the wheel pants so I used the styrene tires. The well-printed decals provide markings for any of six service aircraft aboard either airship. The kit scales well with the dimensions included in the instructions.

The box top notes that the kit is for experienced builders and I agree. The complexity of the engine, rigging, and paint scheme, along with the lack of locator pins, makes this kit a project for advanced modelers. I spent 30 hours on mine, and I hope Williams Brothers brings out more kits of "real" airplanes — with props! *Bill Gebhard*

**Kit:** McDonnell F3H-2 Demon  
**Scale:** 1/72  
**Manufacturer:** RAREplanes, 69 Redstone Hill, Redhill, Surrey, England  
**Price:** \$8.50.

THE LITTLE-KNOWN Demon was the direct ancestor of the famous F-4 Phantom II. The large wing area and tail surfaces well behind the exhaust nozzle suggest the family heritage. But the Demon never knew the success of its offspring. It was underpowered and had to compete with Vought's F8U Crusader and Douglas' F4D Skyray for the position of fleet defense interceptor. When the Phantom II came along with its superior radar and ground attack capability, it made all of these aircraft obsolete.

RAREplanes' vacuum-formed kit contains 50 parts molded in .040" white styrene sheets with a clear canopy and cast-metal landing gear and refueling probe. The surface detail is outstanding for a vacuum-formed kit, but typical for RAREplanes. I was particularly impressed with the exhaust nozzle and interior detail of the gear doors. The metal landing gear is well detailed but the shape of the nose gear strut and wheel is inaccurate compared with photos in *U. S. Naval Fighters* by Lloyd Jones. The kit contains two drop tanks and pylons for Sparrow missiles.

Overall, the parts fit well, but the cockpit interior tub fits poorly against the intake inserts and fuselage halves. I replaced the



flat portion of the bottom of the tail fairing with a piece of .020" styrene, extending it into the fuselage, and producing a slightly concave surface over the exhaust nozzle.

RAREplanes suggests using balsa spars through the fuselage to support the wing, but gap-filling super glue gives enough strength to the wing-fuselage joint to make this unnecessary.

The color information for the VF-124 Demon in the instructions says the design on the fuselage was light blue, but this should be yellow. I decided to paint my model in the

markings of VF-112 using Microscale solid dark red decal sheet No. TF-18 and letters and numbers from other Microscale sheets. I modified Sparrow III missiles from my spares box into Sparrow I missiles by sharpening their noses.

The finished model looks like the real Demon and it is surprisingly big; the Demon was almost the same size as the Phantom II. The kit took 35 hours to build. Although it is not an easy vacuum-formed kit, experienced modelers should be able to easily handle its complexities. *Paul Boyer*





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**Price:** \$10.95.

**THE M109 IS THE PRIMARY** self-propelled howitzer used by the U. S. Army and numerous allied nations. Despite its looks, the M109 is mobile artillery — not a "tank." It can lob a 155 mm round over 11 miles from forward operating locations.

The Italeri kit contains 218 parts molded in olive and dark green styrene with polyvinyl tracks. The plastic seems more brittle than usual. Unfortunately, the level of detail is below the state of the art of recent armor models. Intake grilles, hinges, and grab handles are not as finely molded as those on previous Italeri kits. Except for the gun breech (two versions, sliding and hinged blocks), no interior parts are included. There are optional muzzle brakes, commander's turrets, and machine guns. Despite the U. S. Army camouflaged version

on the box art, only decals for Italian, German, Dutch, and Belgian M109s are included in the kit. Testor may change the markings when it brings out its issue of this kit for our domestic market.

The instructions were easy to understand and the kit was simple to build with no major fit problems. Many parts had either raised or recessed mold marks which took time to eliminate. The decals were well printed, but they were thick and silvered easily. As usual, I left off the tracks and hand tools until the model was painted and weathered. I tied the tracks down to the road wheels to simulate the proper tension.

The finished model scales closely with the dimensions in Arco's *Illustrated Guide to the Modern U. S. Army*. Moderately experienced armor modelers should have no trouble building the kit; I spent 20 hours on mine. The kit produces an adequate replica of the machine, but the level of detail and lack of interior left me wanting something more.

Glenn Kreinus

**Product:** No. 411, Hobby Paint Shaker  
**Manufacturer:** Robart, 310 N. 5th St., St. Charles, IL 60174  
**Price:** \$29.95.

**INSUFFICIENTLY STIRRED PAINT** is one of the primary causes of poor paint jobs; proper blending of the pigments, binder, and vehicle in model enamels and lacquers is essential for success. I've seen modelers pick up a bottle that has been sitting on the workbench for months or years, give it a few quick shakes, and then proceed to thin it for airbrushing. Those who know better may work their wrists many minutes for each bottle, while orthopedic surgeons wonder at the curious injuries incurred in this otherwise sedentary hobby.

Robart has borrowed an idea used by paint stores for shaking paint; an electric motor spins an eccentric cam which in turn pushes a rocker arm attached to a bracket

that holds the paint container. The concept is sound and the Robart Hobby Paint Shaker does a good job mixing paint.

The unit measures 5½" x 5½" x 3" tall overall, and will accept any paint bottle up to 1 ounce; the bottle is simply strapped on the bracket and the on/off button pushed. The bottle shakes up to 5,000 times per minute, depending on the weight of the bottle in the bracket (the heavier the bottle, the more strain imposed on the motor, and the slower the cycles). Our sample was the 110-volt AC version which includes a transformer rated at 6 volts and 750 mA.

There were no instructions included and no hint of how long a bottle be shaken for a proper mix. I had reports of Paint Shakers burning out after little use, so I destructively tested our sample unit. I used a Testor Model Master ½-ounce bottle and shook it for three minutes, then turned the unit off for one minute. I repeated this cycle for 20



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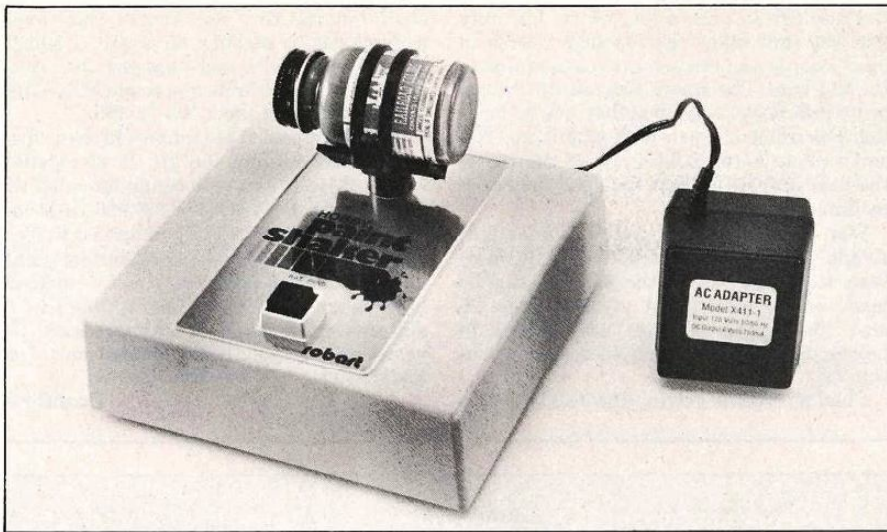
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minutes when the unit stopped. I was able to push start it a few times, but each time the unit seemed a little more sluggish, until finally it would shake no more.

Disassembling the unit I found melted plastic fouling the moving parts inside the motor. Since the unit is guaranteed for one year, I sent it back to Robart with a letter describing the test and my analysis of the problem. Robart responded quickly; the transformer was putting out too much voltage, causing plastic parts inside the motor to melt. Robart replaced the motor and added a small wire to the circuit that acts as a resistor, limiting the voltage to the motor. The manufacturer also replaced the soft

plastic bottle strap (which broke when I tried to wrap it around a 1-ounce Floquil bottle) with a sturdy rubber belt.

I retested the unit, using the same procedure as before, and it passed the one-hour mark without a hint of a problem. I don't know if the battery-operated unit (No. 410) has the same problems, but it appears that Robart has solved those I found in the AC unit.

Although at first it seemed like a luxury, I am beginning to depend on this tool. I recommend it, but it should not be abused. A two-minute shake for each bottle should be sufficient for mixing all but the most-settled paint.

Paul Boyer



Kit: No. 5431, F-105G Wild Weasel

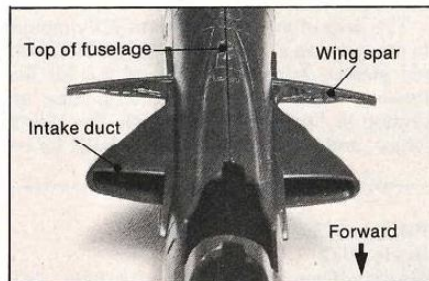
Scale: 1/72

Manufacturer: Monogram Models Inc.,  
Morton Grove, IL 60053

Price: \$5.25.

THREE YEARS AGO, Monogram blessed all Thud fans with its excellent 1/48 scale F-105G, re-released as an F-105F a year later. Although many modelers have hoped for a 1/48 scale F-105D single-seater, others like myself hoped that Monogram would scale the two-seater down to 1/72, and that is exactly what the company has done.

The kit contains 78 parts molded in olive and clear styrene. Included are two crew figures, two Shrike and one Standard Arm missiles, and two drop tanks. The molded-in detail in the cockpit and wheel wells is outstanding. The canopies are clear and fit well. Decals include markings for the 561st TFS and the Georgia Air National Guard.



Generally, the instructions are clear, but there are a few steps that don't agree with the kit. In step 3, the instructions show a large locator pin in the left fuselage half that rests on a tab on the nose gear well (part No. 8); when properly installed, part No. 8 doesn't touch this pin.

In step 5 it's not clear how the wing spar (part No. 24) is installed. It can be placed in

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the fuselage in any of four ways, but only one way will allow the fuselage halves to meet cleanly and the wings to be mounted to the fuselage. The small diagram in the instructions doesn't say whether you're looking forward or aft, or which way is up. The small photo here (looking aft at the top of the fuselage) shows how the spar should be mounted.

Step 23 shows three small antennas that should be mounted to the bottom of the fuselage; these are not in the kit, but can be made easily from sheet styrene. Step 26 says the Shrike missiles are molded in halves, but they are one-piece castings in this kit.

I had no trouble getting the decals to con-

form, but the tiny red stencils were overprinted out of register on white. I substituted the stencils and changed the serial number of the aircraft to a triple MiG killer using Microscale sheet No. 72-368.

Once I got past these minor glitches, I had no trouble building the kit. It fit together well and looks accurate compared with the drawings in Bert Kinzey's *F-105 in Detail and Scale*. I spent only ten hours on the kit, a pleasant, out-of-the-box project that yields a highly detailed, accurate replica — it would have taken considerably more time just to add this much detail to a kit produced ten years ago. If you liked Monogram's 1/48 scale Thud, you'll like this one, too.

Paul Boyer



**Kit:** No. G-161, 1959 Chevrolet Impala  
**Scale:** 1/32

**Manufacturer:** Gunze Sangyo, distributed by Empire Pacific Ltd., 10805 E. Artesia Blvd., Cerritos, CA 90701

**Price:** \$5.95.

FLASHING FINS FROM the '50s, the first of Gunze Sangyo's '50s-'60s Collection is the sporty '59 Impala convertible. Its cat's eye taillights and garage-scoring fins were the things I liked best when I was a ten-year-old car nut.

Appropriately, the kit contains 59 parts molded in red, white, chrome, and clear styrene, along with black vinyl tires and gears for motorization. The kit includes optional wheel covers, raised convertible top or seat cover, and a bulky Continental kit. There is no engine detail, but the interior is nicely molded with realistic dashboard instruments and steering column.

The body of my kit was beautifully molded in one piece in a rich but slightly translucent red plastic. Another version of the kit features a white body. The instructions are printed in Japanese and English, are easy to follow, and show color photos of built up red

and white models. Interestingly, the instructions label the car a "Sports Coupe."

The kit almost snaps together; the only glue needed was to attach interior parts. I airbrushed the upholstery with Floquil Signal Red and left the white vinyl areas unpainted. I didn't paint the body, but I wished I had since the translucent plastic allows the locator tabs of the interior to show through. I used Bare Metal Foil for the chrome trim along the sides, fins, fenders, and windshield.

The taillights were molded clear so I tinted them by sealing with Future acrylic floor shine and applying four coats of Floquil Lustre Glaze Red. (The new Tamiya clear acrylic colors will eliminate the need for sealer.) In the fifties, any sporty car had to have wide whitewall tires, but like many recent car kits, the tires included don't have whitewalls, so I painted them on with Polly S flat white.

Completing the model took 15 hours, nearly half of that applying the foil trim. It looks great and already I'm thinking about some aircraft/auto dioramas: How about this model parked next to Hasegawa's 1/32 scale F-104C Starfighter?

Paul Boyer

**Kit:** No. 5435, EF-111A Raven

**Scale:** 1/72

**Manufacturer:** Monogram Models, Inc., Morton Grove, IL 60053

**Price:** \$5.50.

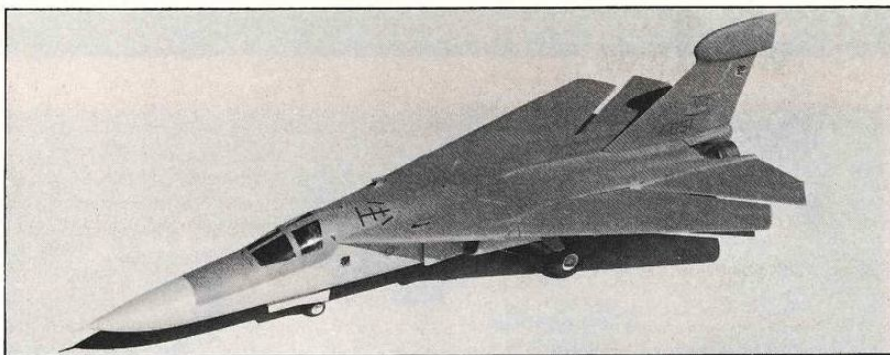
ONCE DUBBED THE "Sparkvark" (a variation on the F-111's unofficial nickname "Aardvark"), the EF-111A Raven is the electronic warfare version of the controversial swing-wing attack bomber. Without dropping ordnance, the EF-111A can render an enemy's radar systems useless over a

wide area. The sensors in the bulbous tail fairing detect and classify enemy radar threats and the "canoe" fairing beneath the fuselage emits powerful jamming signals.

Monogram's kit consists of 64 excellently molded gray and clear styrene parts. The landing gear and gear well detail rivals anything in Monogram's 1/48 scale kits. Another nice touch is the overhead instrument console that mounts inside the canopy.

But the kit is not for beginners. The EF-111A's design is complex, and to duplicate it, Monogram has produced a compli-





Phillip Friddell

cated assembly procedure. The rear fuselage subassembly straddles the forward fuselage (this area is going to be tough for youngsters), and the swinging wings and slot fillers (part Nos. 21 and 22) add to the complexity. Probably the most difficult areas to assemble cleanly are the intakes with their shock cones and molded-in vortex generators. All this is complicated by the instruction sheet which is vague in some of the steps where components must be attached carefully to ensure good fit.

I found that the forward fuselage halves fit together better if the nose gear well assembly is attached to the left fuselage half, rather than the right half as indicated in the instructions. The fuselage slot fillers occasionally disengage, so instead of cementing the afterburner cans, I just pressed them in so I can remove them to reach the malfunctioning fillers with a pencil.

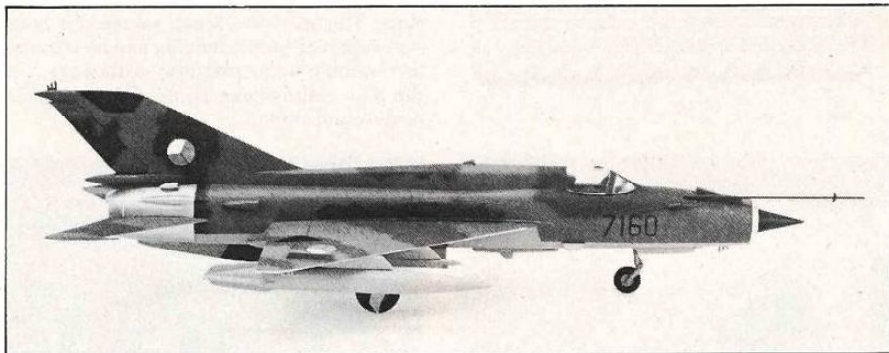
As in other F-111 kits, I had trouble fitting the vertical stabilizer and afterburner area.

I chose to cut off the tabs on the pegs of the horizontal stabilizers so I could mount them after the fuselage was finished; this made it easier to clean up the seams and make a clean color division line in the paint scheme.

The low-visibility decals were thick, glossy, and out of register; the gray letters were actually a black screen printed over white. I substituted Microscale decals whenever I could.

Monogram did an excellent job of creating an accurate replica. Compared with photos and drawings in Bert Kinzey's *F-111 in Detail and Scale* and Kim Norton's article in *IPMS/USA Quarterly*, Vol. 19, No. 2, the kit duplicates the unusual design and subtle additions to the basic F-111 airframe. I spent 14 hours on the model, more than usual due to the complex assembly. This kit is easily the best replica of any F-111 variant available today, but beginners might want to gain experience on simpler kits before tackling this one.

Phillip Friddell



Kit: No. 19, MiG-21 MF

Scale: 1/72

Manufacturer: Kovožavody Prostějov (KP), Czechoslovakia

Price: \$4.95.

THE UBIQUITOUS MiG-21 has become the standard fighter of most of Russia's allies, much as the F-4 and F-5 have been to ours. It is a simple aircraft designed for one mission — air superiority. The delta-winged MiG-21 has undergone many minor changes to upgrade its performance. Until now, MiG-21 fans have suffered from the lack of a decent kit in this scale.

The kit contains 47 parts molded in white and clear styrene. The fine raised surface detail and outline accuracy are the kit's strong points. The instructions are easy to follow and include four-view drawings of one Hungarian and two Czech machines. The decals are thin but slightly out of register.

The canopy is the kit's weakest point; it is too large, thick, and has numerous flaws inside that can't be corrected. Advanced modelers may want to sand it down to fit correctly on the fuselage, then make a vacuum-formed copy. The rest of the kit fit well with a little filling needed at the base of the vertical stabilizer, afterburner, and forward fuselage. I found that sanding down the bonding surfaces of the fuselage halves improved the fit considerably.

The finished model scaled 18" short in span according to the dimensions in the instructions, but that's easy to ignore since the model looks more like a MiG-21 than any other kit available in this scale. KP's kits improve with each release, with only the canopies not equal to the state of the art. A beginner will have little trouble building this kit; I spent 15 hours on mine and I'm happy with the results.

Dennis Moore

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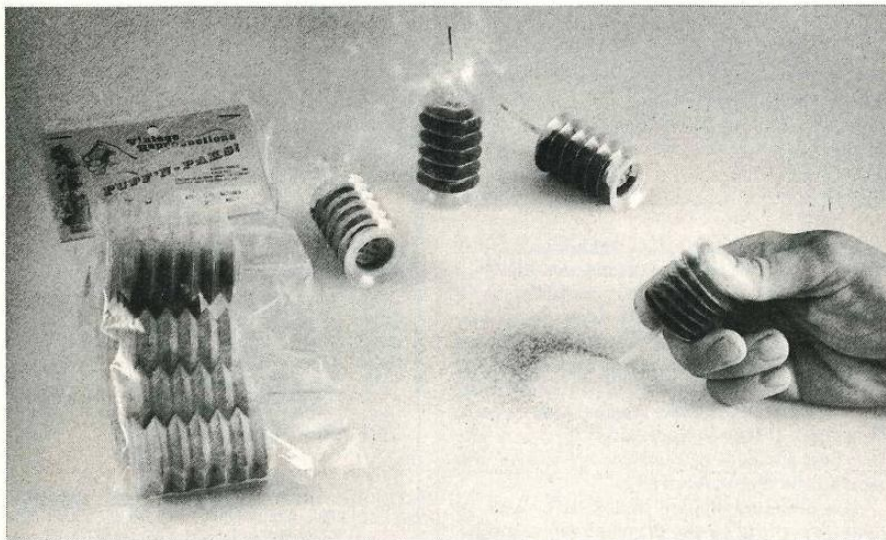
FSM readers should check their local hobby shops for the items in this column before writing directly to the manufacturers.

FINESCALE MODELER staff photos by  
A. L. Schmidt and Paul A. Erler



## Masking gel

New from Mikros Corporation, 511 11th Avenue South, Minneapolis, MN 55415, is Mytee Mask, a nonstaining, odorless, non-toxic masking gel. Mikros states that a model can be painted immediately after Mytee Mask is applied, the gel easily covers complex and irregular surfaces, and it does not harden or dry out during storage. A 3-ounce jar of Mytee Mask sells for \$3.00; add \$1.00 per jar for postage if ordering from Mikros Corporation.



## Landscaping grass kits

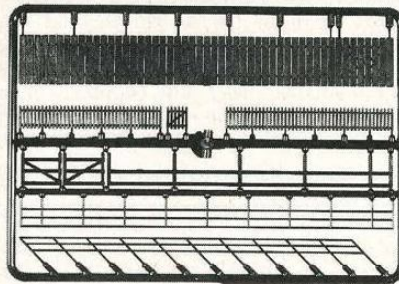
You can create standing grasses and evergreen foliage with Puff'N-Paks from Vintage Reproductions, Box 7098, Colorado Springs, CO 80933. Each flexible bellows pack contains 30 cc of synthetic fibers blended to match actual grass. Assortments available are No. 700, 1/16"-long spring and



## 1/24 scale floatplane kit

This 1/24 scale de Havilland Beaver floatplane is produced as a promotional item for Canadian Mist Whisky. It is injection-molded in bright yellow polystyrene, contains 26 snap-together pieces, and has a 24"

wingspan. Decals and instructions are included. To order the floatplane, send \$14.95 to Canadian Floatplane Offer, P. O. Box 105, Grafton, WI 53024; residents of Alaska and Canada should add \$2.00 for shipping and handling.



## HO scale fencing

New from Central Valley, 13000 Satcoy Street, North Hollywood, CA 91605, is black styrene fencing in HO (1/87) scale, product No. 1601. Each package, \$3.95, includes four parts trees with five styles of fencing material: 3'-high pickets with gate; 4'-high post and rail with gate; 6'-high vertical board with gate; 3'-high welded pipe; and 3'-high welded pipe for 45-degree stair steps. The board fence can be used for board sidewalk, the picket fencing can be trimmed to resemble open platform walkways, and the pipe railings can be used on industrial models and ships.



## Metal adventure gaming figures

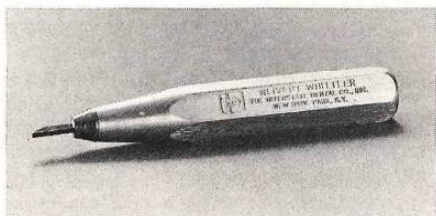
Two new series of metal figures from Rafm Company Inc., 19 Concession Street, Cambridge, ON, Canada N1R 2G6, are "Flint and Feather" and "Paladins and Plate." Thirteen packs of figures are available in the "Flint and Feather" series, which deals with the French-Indian wars in North America during the 1700s. Shown is No. IN-10 (left), Chief Joseph Brant, mounted, \$2.00. More than 40 figure packs are available in the "Paladins and Plate" series, which Rafm says is an effort to fill the heavy plate gap from the end of the medieval to the beginning of the Renaissance periods. Product No. 1438 (right) contains six hand gunners and sells for \$4.00.





#### 75 mm and 88 mm metal soldiers

Julian Benassi of Benassi's Choice, 55 St. Mungo Avenue, Glasgow G4 0PL, Scotland, produces a line of metal soldiers. Shown are two World War One-era German soldiers. Number 88/2, left, is an 88 mm flier, £9.95. Number 75/2 is a German Jäger serving with a Storm Trooper group, £6.50. Add 30 percent for airmail postage. Benassi states that all parts are cleaned up by hand to eliminate such things as flash, molding lines, and imperfections; the metal porosity is polished away; and the parts are adjusted for a perfect fit of all joints.



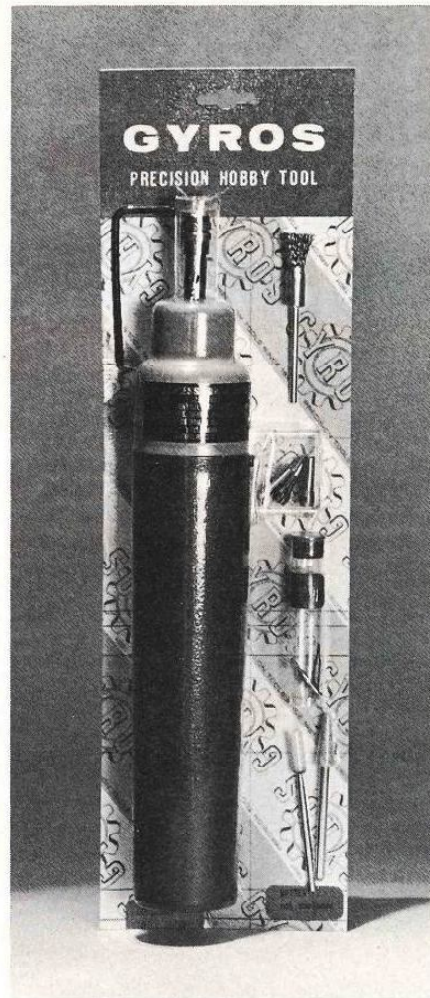
#### Sharpening tool

The Neivert Whittler is a five-sided tool made of tungsten carbide which can be used to sharpen scissors, chisels, X-acto knives, and other modeling tools. Sharpening instructions are included. It can be ordered for \$28.75 (\$26.75 each for two or more) from Temrex, 112 Albany Avenue, P. O. Box 182, Freeport, NY 11520.



#### 54 mm Napoleonic figures

Four new 54 mm metal figures are available from Imrie/Risley Miniatures, Inc., P. O. Box 89, Burnt Hills, NY 12027. From left are No. C-112, chasseur officer on horse-



#### Cordless drill

A recent release from Gyros Products Co., Inc., 338 Route 59, Tall Pines Industrial Park, Monsey, NY 10952, is the Cordless Electro Power Drill, product No. 15000. The 12,000 rpm drill runs on three C batteries (not included) and comes with collets which hold drills 55 through 80 as well as 3/32" and 1/8" shank accessories. The drill is available at hobby shops in the U. S. and Canada; the suggested retail price is \$19.95.

back, \$16.00; No. C-113, chasseur trooper on foot, \$6.50; No. C-111, Napoleon on foot, \$6.50; and No. C-110, Napoleon on horseback, \$16.00. All figures come with painting instructions.

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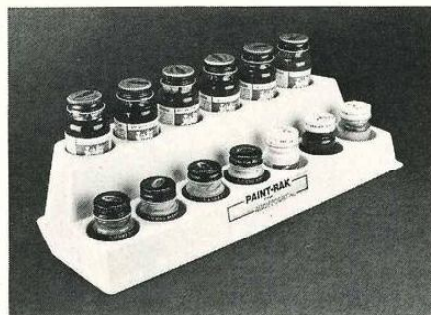


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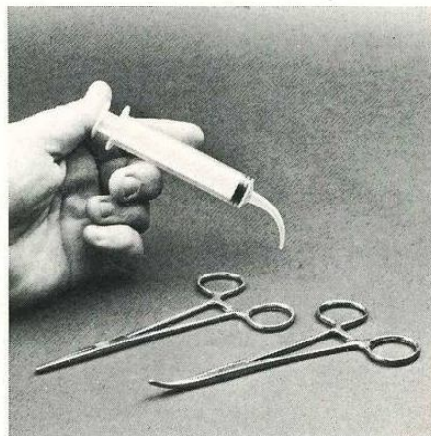
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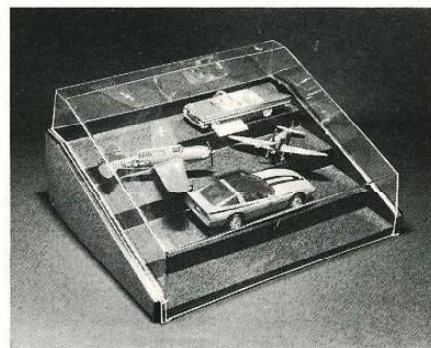
### Paint bottle holder

Alloy Forms Inc., 15125-B Califa Street, Van Nuys, CA 91411, offers a stand which holds 13 bottles of paint. The Paint-Rak, product No. P-3000, is made of sturdy, vacuum-formed, yellow plastic. The price is \$5.95. Add \$1.50 if ordering directly from Alloy Forms.



### Glue gun and hemostats

Bru Line Industries, P. O. Box 3786, Center Line, MI 48015, sells a 12 cc glue gun, catalog No. 300, \$1.39. It can be used to glue hard-to-reach areas, transfer paints and liquids, and fill airbrush bottles. Also available from Bru Line are stainless steel hemostats, useful for rigging and holding small parts. The straight hemostat, No. 302, sells for \$7.95, and the curved hemostat, No. 303, sells for \$8.50.



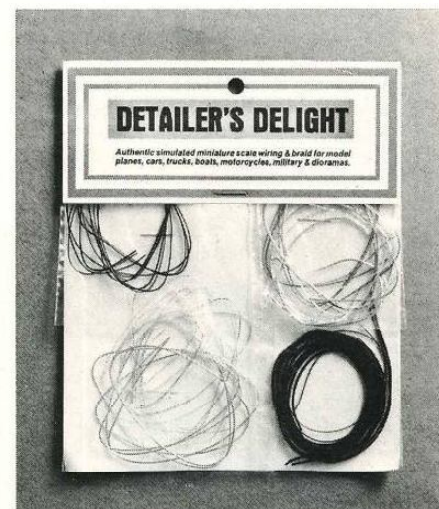
### Display case

Monogram Models, Inc., 8601 Waukegan Road, Morton Grove, IL 60053-2295, has introduced a collector's display case, No. 6033. The snap-together case has a black plastic base and a clear, removable dust cover. It has four shelves, each 15" long, and retails for \$12.00.



### Modeling compound

The Friendly Plastic Company, Ltd., 2888 Bluff Street, No. 233, Boulder, CO 80301, has released Friendly Plastic, a modeling compound which comes in rice-sized pellets. The pellets soften and fuse in 15 seconds when they're added to boiling water. You can form the material with your hands and, although it hardens in ten minutes, it can be remelted. Friendly Plastic is strong, waterproof, and can be painted, glued, carved, and drilled, according to the manufacturer. It is available in two sizes: A 4.4-ounce bag sells for \$5.00, while a 1¼-pound jar costs \$25.00.



### Scale braid and wiring

Recently introduced by MWA Enterprises, P. O. Box 70533, Fort Lauderdale, FL 33307, is Detailer's Delight, simulated scale wiring and braid for model cars, planes, boats, trucks, and motorcycles. The wiring and braid can be painted. A small kit, No. 6180S, sells for \$3.98, and a large kit, No. 6180L, sells for \$4.98; both prices include postage.

**FSM**





## FROM THE EDITOR

### FSM at age three

AS YOU READ THIS, FINE SCALE MODELER has been on the modeling scene for just three years. Our Spring 1982 issue — a test, really — appeared in January 1982, and this issue completes an even dozen since the magazine commenced regular publication in the fall of the same year.

In those three years we've made substantial progress toward our goal of bringing you the best possible modeling magazine. We've tried to tread a path near the middle of the road, mixing truly spectacular modeling with good, solid techniques that every reader can use. If reader letters and phone calls are any indication, so far most of you like what we've been sending your way.

Perhaps the biggest improvement we've made in FSM was increasing the frequency from quarterly to bimonthly one year ago, and many of you have written to ask when we'll take the next step — to monthly publication. Right now I can only reply that we *hope* to do so soon, but that's a prayer, not a promise.

FSM's future — like that of any 3-year-old — looks bright, and with your support this magazine will continue to grow and improve.

*Bob Hrychak*

Editor

P. S.: This issue is your last opportunity to enter the FSM Sweepstakes. The rules prohibit me from having any chance at the workbench and full suite of modeling tools described on pages 56 and 57, but somebody's going to win our grand prize. Enter, and that somebody may be you.

FineScale  
**MODELER**

## NEXT ISSUE

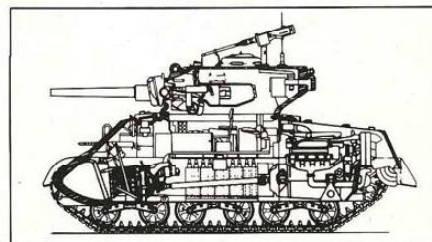
### FEATURES



Painting faces on figures. George DeWolfe photos.

Whether you regard figures as important parts of your cars, planes, armor, or dioramas, or as a hobby in themselves, you'll gain valuable insight on making them realistic when author George DeWolfe explains his techniques for painting faces in artist's oils. George takes on the subject step by step, and you'll be able to apply his methods to your figures, regardless of their scale. Pat Percival takes up an equally popular subject when he unravels the mysteries of the fine art of vacuum-forming. Included are instructions for building a simple vacuum-forming device!

### DATA/DRAWINGS



M4A3E2 "Jumbo" assault Sherman. D. P. Dyer.

The M4A3E2 "Jumbo" assault Sherman is the subject and D. P. Dyer is the draftsman as FSM presents plans and photos of this WWII tank variant. Dave Musikoff provides accompaniment in the form of an article on modeling the Jumbo in 1/35 scale. You'll also find scale plans of Charles Lindberg's Lockheed Sirius, "Tingmissartog," and learn how to model the plane in 1/48 scale.

**ALL IN  
MARCH/  
APRIL  
FSM!**





# Superdetailing Monogram's 1/48 scale AT-6 Texan

Basic materials and techniques for modeling an advanced trainer

**BY BOB STEINBRUNN**

**I** HAVE LONG been intrigued by the sharp angles and subtle curves of the AT-6 and always wanted to build a flashy model of a silver "Six." With its brutish Pratt & Whitney R-1350 Wasp, its howling propeller, and expansive "greenhouse," it exudes detail from every square foot—an ideal modeling subject for that superdetailer who lurks in us all. Monogram's AT-6 kit (No. 5306) is worthy of extra detail, but can be built straight from the box and still hold its own in a contest.

I wanted to model a natural metal finish AT-6 and found exactly what I

was looking for in a profile in an IPMS/U. S. A. *Update*. The white cowling, red, white, and blue rudder stripes, and black fuselage numbers, along with the early four-position U. S. insignia, added color and contrast to the natural metal finish. What better portrayal of the world's best-known trainer than a trainer color scheme? So, I settled on number 623, a North American AT-6A Texan of the 83rd School Squadron, USAAF Eastern Flying Training Command, Maxwell Field, Montgomery, Alabama, in July 1941, just prior to the U. S. entry into World War Two. This was an early model of the Texan which was similar, but not identical to the

T-6Gs commonly found at air shows (see Ken Sommerfield's T-6G article on page 40).

This first reference was only a line drawing; I wanted a photograph of my subject to provide both inspiration and accuracy. I wrote to the Defense Audiovisual Agency Production, Distribution, and Depository Activity, Building 168, NDW, Washington, DC 20374. This agency maintains the official still photographic records of the armed forces. I described exactly the aircraft type, number, unit, location, and date, and requested information on any photos of No. 623 the agency might hold in its archives. I received a nega-





Bob's superdetailed Texan features pre-World War Two trainer markings. The aluminum finish is accented by the painted rudder stripes. Note opened vacuum-formed canopy.



DAVA G-14-705K-PR

The author based his model on aircraft No. 623 in this photo, taken at Maxwell Field, Montgomery, Alabama, in July 1941.

tive number and ordering information for black-and-white prints. The photo taken at Maxwell field showed lots of detail missing in the line drawing.

After gathering all the references I still lacked detailed photo coverage of the AT-6's wheel wells and flap wells, and closeup views of the intricate aileron hinges and trim tab actuators, engine, and so forth. Luckily, the Confederate Air Force (Southern Minnesota Wing) maintains a Harvard Mk IV in Minneapolis and the good folks at the CAF allowed me to photograph the aircraft and photocopy pertinent illustrations in their AT-6 maintenance manual. I now had all the details and

reference material I could ask for, and just had to invest my time in building. I was to discover subtle and small differences among the variants of the AT-6, and ones which set the "A" model apart from the others.

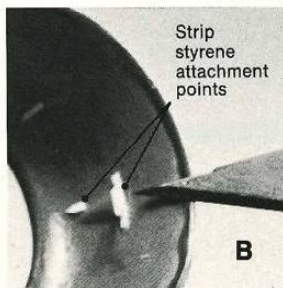
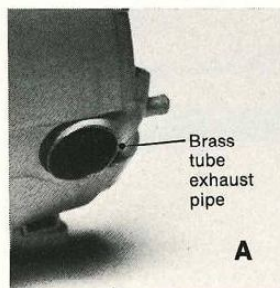
I estimate that I spent about 600 hours spread over six months on the project. The model won a first place award at the 1984 IPMS/U. S. A. national convention, so I feel the results outweigh the time expended. And most important, it was darned good fun!

#### REFERENCES

- AT-6 airplane maintenance and erection manual, USAAF.

- AT-6C Texan Scale Plans, Super-scale, Arlington, Texas.
- Bell, Dana, "Texans," IPMS/U. S. A. *Update*, Vol. 15, No. 5, p. 116.
- deVries, John, *North American AT-6/SNJ Texan*, Historical Aviation Album, Vol. XVI, Temple City, California, 1980.
- Kohn, Leonard, *The Story of the Texan*, Aviation Publications, Appleton, Wisconsin, 1975.
- Morgan, Leonard, *The AT-6 Harvard*, Famous Aircraft Series, Arco Publishing, New York, 1965.
- Ohlrich, Walter and Jeff Ethell, *The Incredible AT-6, Pilot Maker*, Specialty Press, Osceola, Wisconsin, 1983.





**Step 1. Engine and cowl.** I improved the exhaust stack by cutting it off, filing the opening smooth, and inserting a  $\frac{3}{16}$ "-diameter K & S brass tube. I cut the tube at an angle and thinned the inside with a No. 11 X-acto blade for a better appearance (A). This was super glued in place and sections of sheet plastic were inserted to blank off the far end.

The cowling appeared too large for the fuselage and this was difficult to correct. This mismatch was emphasized when I thinned the inside trailing edge of the cowling. My solution was to mount the cowling as low on the fuselage as I could to minimize the amount of cowling extending above the fuselage upper decking. However, this prevented me from using the cowling locating peg molded on the lower fuselage which goes into a slot cut in the lower cowling. Since neither was authentic, I cut off the square peg, filed it smooth, and filled the cowling slot with sheet plastic and putty. I cut and fit Evergreen .020"-square strip styrene attachment points to the inside of the cowl where it bolts to the engine cylinder heads (B). The cowling section latches were scribed on the outside on both sides, using plans and photos for reference.

The kit engine detail was cut away and replaced with sprue and scrap valve pushrod guides, spark plugs, ignition harness ring, wiring, prop governor and cables, rocker box, and inter-cylinder drain lines. I separated the oil sump from the two bottom cylinders with a razor saw. Since the AT-6 had a two-blade prop and no spinner to obscure detail, this extra detail added depth and dimension to the engine.

I added a flange to the propeller dome by making a sheet styrene ring. First, I drilled a hole the proper size in a larger square of plastic and sanded the outside edge down to create a ring. This was easier than cutting out a disc and trying to drill a hole in its center. The prop dome nut was cut out of .010" styrene, and the crooked kit hub bolts were cut off and replaced with new ones made of sprue.



**Step 2. Cockpit.** Since I wanted the canopies open, this was the ideal subject for a full-blown detailed interior. The AT-6 was designed during the transition from steel tube and fabric to monocoque structures. The aft fuselage is semimonocoque and is bolted to the welded steel tube main fuselage section carrying detachable aluminum panels for access to the interior. The aluminum sheet covering the cockpit section doesn't bear any load and provides streamlining only.

The steel tube main structure is visible in the cockpit interior and provides a lot of character. I wanted to duplicate it with all its attached interior components. Although the kit interior is nicely done, it is incomplete and not accurate for the "A" model. Monogram molded the left-hand consoles (with trim tab wheels and other controls) on the inboard side of the tube structure; they should be placed outboard, between the tubing and the aluminum fuselage panels.

I find it easier to scratchbuild an assembly than to modify kit parts, so I built my own tube structure. It was something new and different — an engineering exercise. I selected Detail Associates' .040" brass rod since it is strong and cuts easily (A).

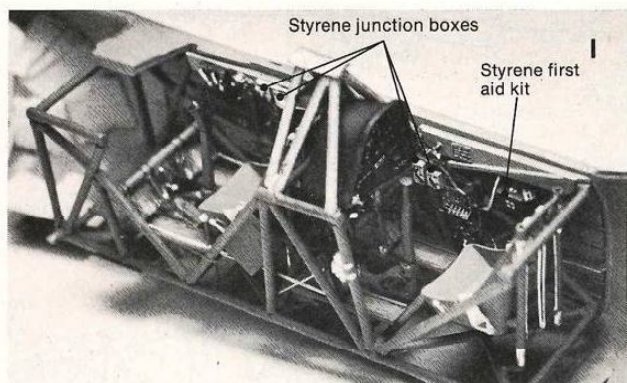
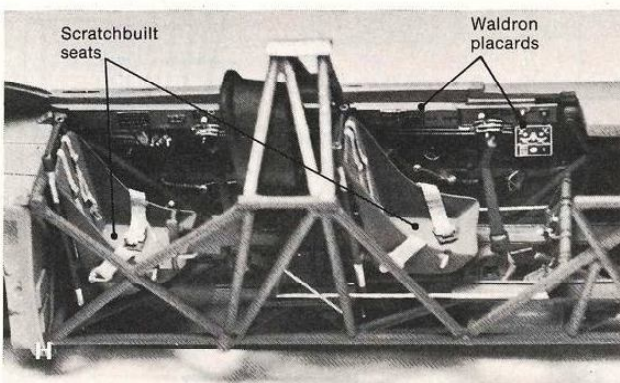
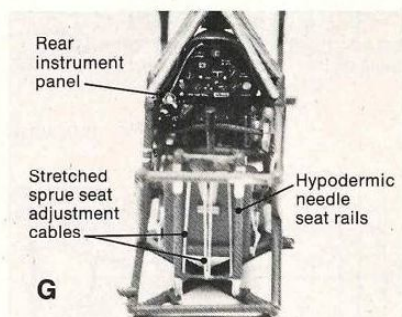
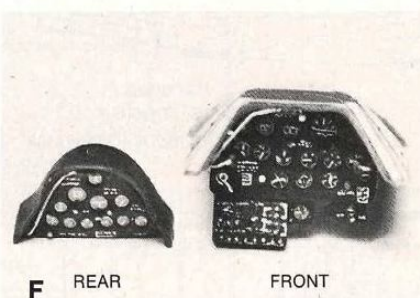
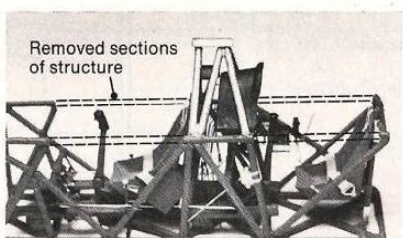
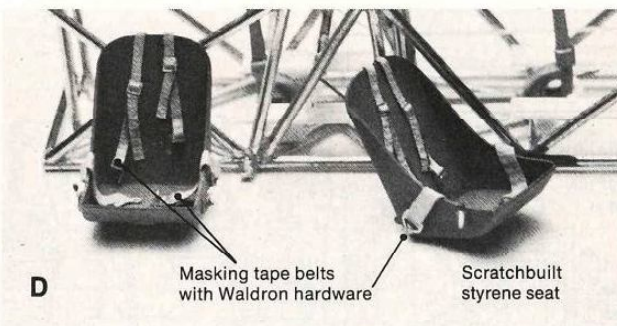
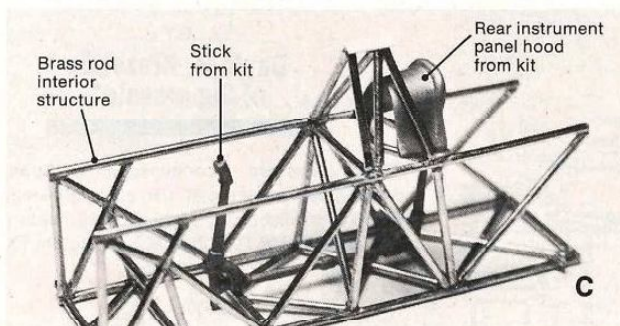
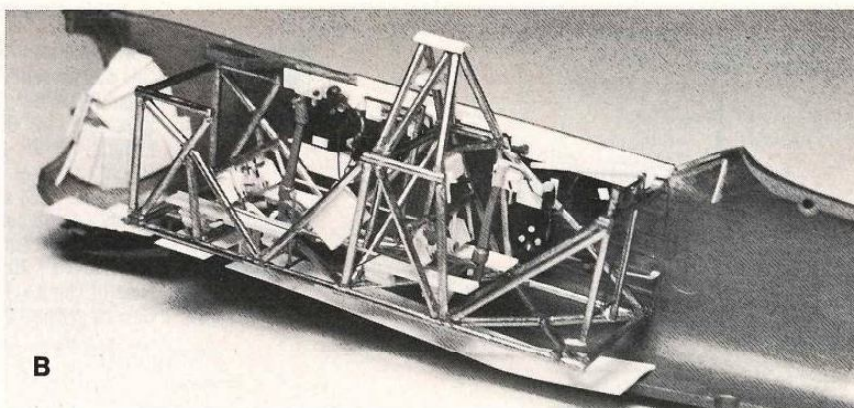
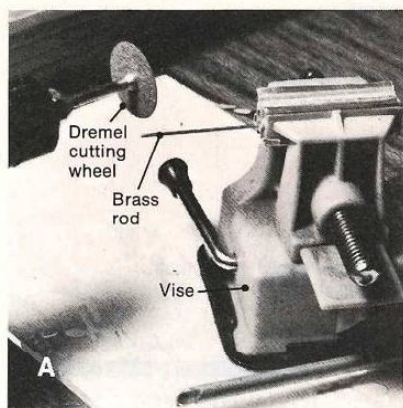
Using the kit parts and AT-6 plans for reference, I constructed the complete framework by cutting and fitting, then cementing with super glue. I was careful to angle and bevel the ends of all pieces to ensure a close fit, and with a bit of super glue as filler, the joints look like miniature welds. I also added brass pegs to the structure to locate it in the existing cockpit mount sockets inside the fuselage. There were more structural members to add than the kit's structure would imply, and the Superscale AT-6 plans were an invaluable reference.

After the brass structure was assembled and dry-fitted to both fuselage halves (B), I added the rear instrument panel glare shield, control sticks, and so forth (C). The rear control stick of the AT-6A was different than that given in the kit; it was removable and had a plain rubber grip with no switches on it.

Most of the remaining details were scratchbuilt using .010" sheet styrene, sprue, and bits and pieces. All of this detail is a big improvement on the kit-supplied parts, but I put over a hundred hours in it.

The kit's rear seat represents the swiveling type found in later model T-6s, but not in the AT-6A. I scratchbuilt two seats from .010" sheet styrene, painted masking tape a canvas color for seat belts and shoulder harnesses, and used Waldron Model Products' buckles and attachment fittings (D).





After adding all the details to the framework, I clipped four sections out of the top rails to provide clearance for the fuselage-mounted radio and throttle quadrant panels (E). The steel tube structure was then painted and seats were attached.

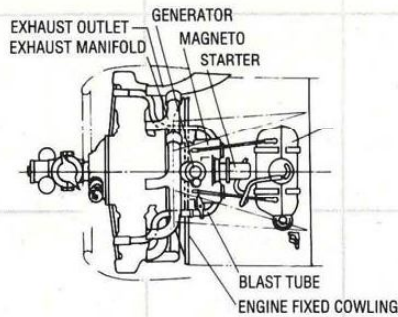
I added details to the fuselage sides, checking frequently for clearance on the tubular framework. I thinned the fuselage cockpit sills, added side panels, and made three-piece instrument panels to give the effect of gauges under glass (F). The rear instrument panel in the

AT-6A did not carry all of the gauges shown on the kit's panel (G).

Some of the radio panels are from Waldron's "Radio front panels and cockpit data plates." This sheet has excess black foil material which can be cut into small sections and used for cockpit charts, placards, and signs. The placard printing was done effectively by semi-dry-brushing with silver and white paint applied with a 00000 brush. Photos H and I show the completed interior installed in the fuselage.



# North American AT-6C

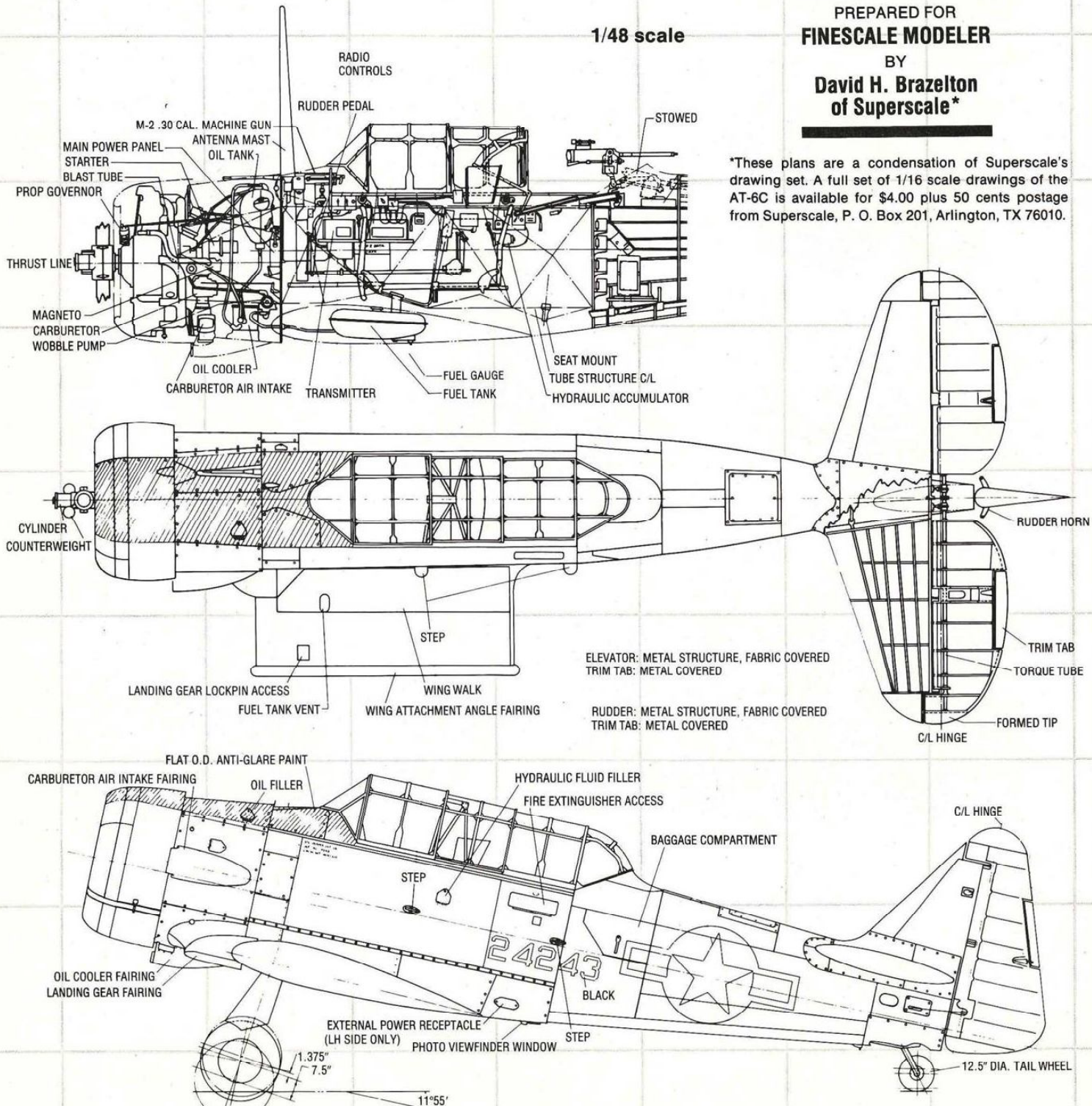


**Manufacturer:** North American Aviation  
**Power plant:** One 600 horsepower Pratt & Whitney R-1340-AN-1 Wasp 7-cylinder, air-cooled radial engine  
**Dimensions:** Wingspan - 42' 0 1/4"  
 Length - 29' 6"  
 Height - 11' 8 1/2"  
 Wing area - 254 square feet  
**Weights:** Empty - 4,158 pounds  
 Gross - 5,300 pounds  
**Performance:** Max. speed - 205 mph. Cruise speed - 170 mph.  
 Rate of climb - 1,200 ft/min. Range - 750 miles.  
 Service ceiling - 21,500 feet.

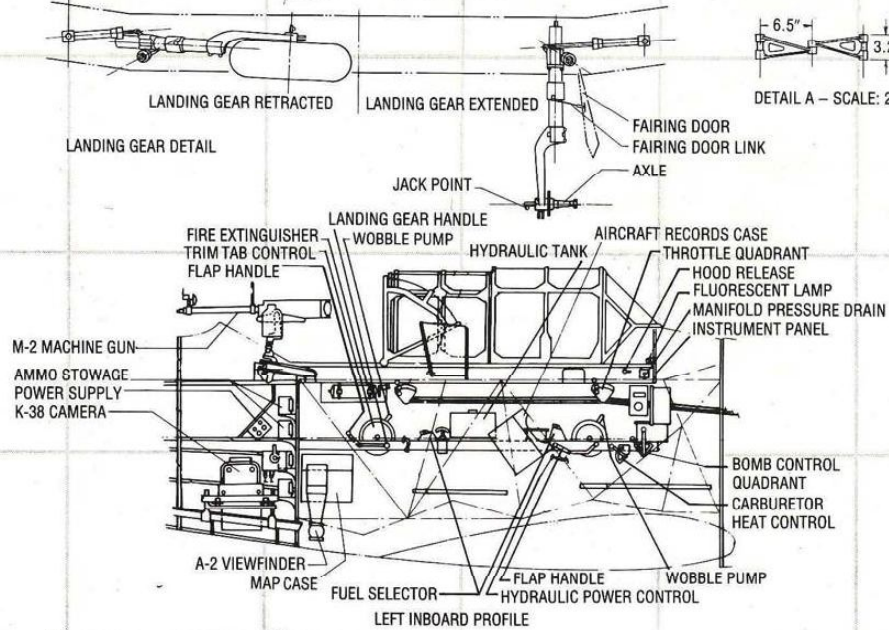
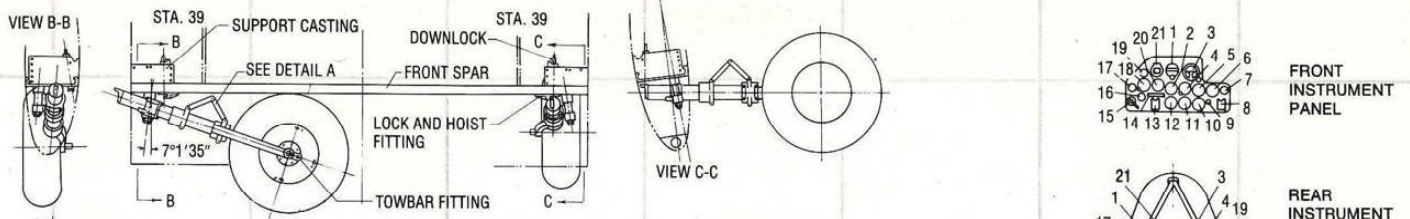
**PREPARED FOR  
 FINESCALE MODELER**

BY  
**David H. Brazelton  
 of Superscale\***

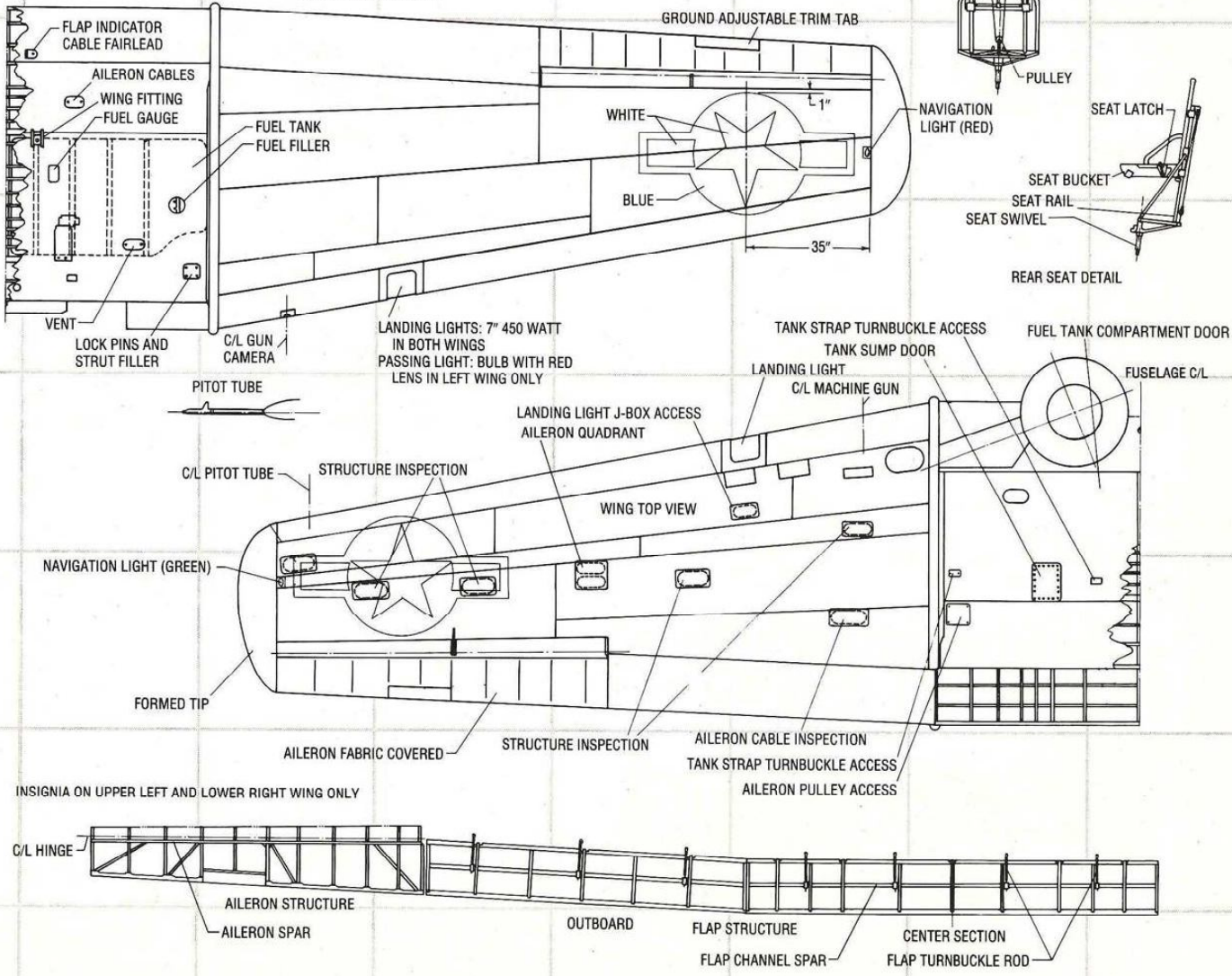
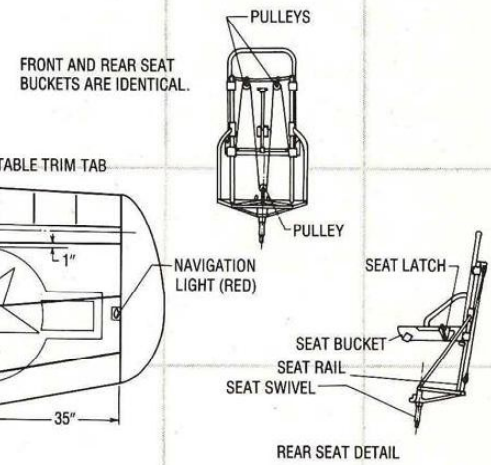
\*These plans are a condensation of Superscale's drawing set. A full set of 1/16 scale drawings of the AT-6C is available for \$4.00 plus 50 cents postage from Superscale, P. O. Box 201, Arlington, TX 76010.



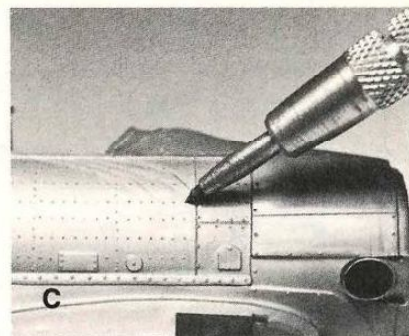
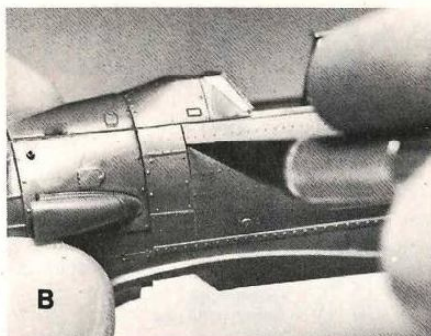




- |                             |                             |
|-----------------------------|-----------------------------|
| 1 DIRECTIONAL GYRO          | 11 ENGINE INSTRUMENT        |
| 2 TURN AND BANK INDICATOR   | 12 FUEL-AIR RATIO           |
| 3 GYRO HORIZON              | 13 ALTITUDE CORRECTION CARD |
| 4 RATE OF CLIMB             | 14 DECAL                    |
| 5 TACHOMETER                | 15 MAGNETO SWITCH           |
| 6 CYLINDER HEAD TEMPERATURE | 16 OUTSIDE AIR TEMPERATURE  |
| 7 CARBURETOR TEMPERATURE    | 17 CLOCK                    |
| 8 COMPASS CORRECTION CARD   | 18 ALTIMETER                |
| 9 FUEL SWITCHOVER LIGHT     | 19 SUCTION GAUGE            |
| 10 MANIFOLD PRESSURE        | 20 AIRSPEED                 |
| 21 MAGNETIC COMPASS         |                             |







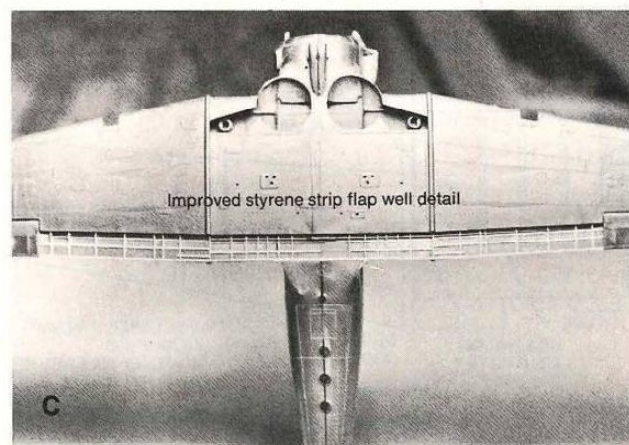
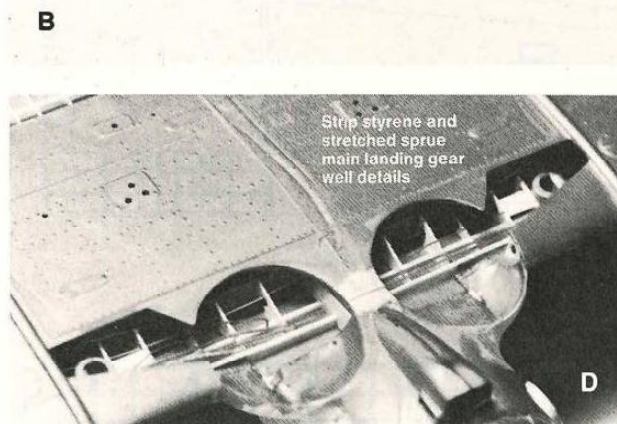
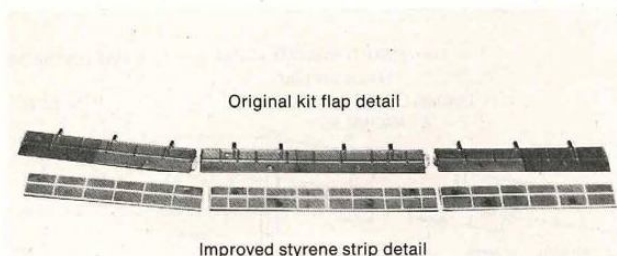
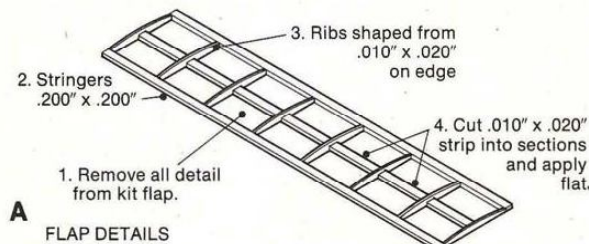
**Step 3. Fuselage assembly.** After completing the interior and touching up any small mistakes, I placed the interior in the fuselage and then cemented the halves together with super glue. Cyanoacrylate (super glue) dries hard, and several beads will usually fill a seam and require a minimum of putty. It can be filed, sanded to a feather edge, and painted like plastic. My favorite is Duro Super Glue because of its handy tapered tip applicator.

After wet sanding the fuselage seams, I polished them with a buffing wheel attachment on my Dremel Moto-Tool (A). Smooth seams are vital because a silver finish amplifies imperfections in the model. I had to use a speed control (rheostat) to keep from melting the plastic. If you

inadvertently melt the plastic, just sand it out and buff again.

My favorite filler putty is 3M Acryl-Blue; it dries quickly, has almost no pitting, and sands out to a feather edge with no chipping. As an added bonus, it comes only in a 1-pound 5-ounce tube, which should last an entire modeling career.

I restored details lost in sanding the seams by lightly scribing short lines freehand (B), or using a straightedge for long lines. For curved surfaces, I use Chart-Pak tape as a guide for the scribe. I thought the rivet detail was a bit heavy, so I sanded it down lightly with wet sandpaper. I restored lost rivet detail with a Sears carbide-tipped scribe (C).

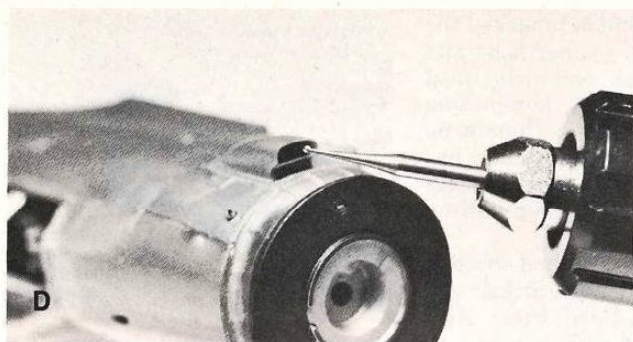


**Step 4. Wings, flaps, and main landing gear.** The rib and stringer detail inside the flaps and flap wells wasn't complete so I filed and sanded it off and replaced it with Evergreen strip styrene (A,B,C,E). I used .010" x .020" strips on edge for the ribs and .020" x .020" for the stringers. The flap actuator was made of scrap parts, and the spanwise push-pull rods were made of K & S .010" wire. I drilled lightening holes in the wing spar just forward of the flaps between the ribs. Following the Superscale drawings, I drilled out the underwing fuel vents, sumps, and drains.

The wheel well edges were thinned for a more scale-like appearance. The indistinct molded-in wheel well detail was cut and sanded away and replaced with spars made of Evergreen .010" x .020" strip, and ribs made from .010" sheet (D).

I boxed in and separated the wells with .010" sheet, and drilled lightening holes in the front structure. I used stretched sprue for the hydraulic lines, a coiled wire

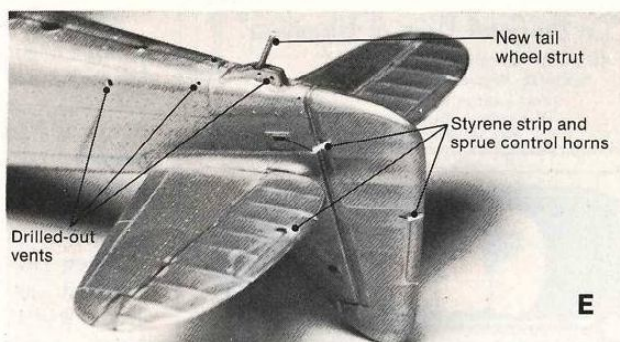




Using a small Dremel cutting burr (D), I opened up the carburetor air intake, oil cooler scoop, and the square holes on each side of the oil cooler scoop. I went slowly, roughing it out with the burr, and did the final trimming with a No. 11 blade.

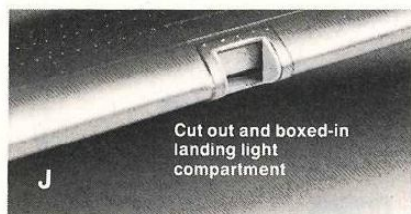
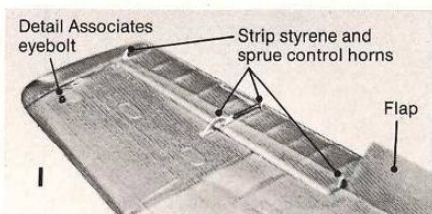
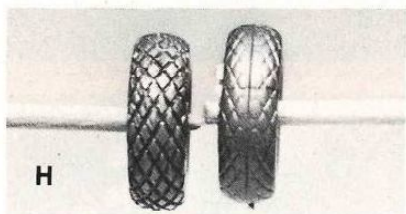
The rudder and fin appeared too rounded, so I filed and sanded them to match the outlines in my references. The external power access door on the left wing root fillet and the recognition lights on the belly were features of later model T-6s. I sanded off the door, plugged the holes for the lights with tapered sprue rods, sanded, and polished the area smooth.

I added a starter hand crank gear made of slotted hypo tubing inserted into the starter hole on the left side of



the engine accessory section. The two .020" styrene steps on the left fuselage side replaced the kit's overly thick steps. Various vent and access holes were drilled in the aft lower fuselage, tail wheel fairing, and elevator trim tabs.

I replaced the kit tail wheel fork with a new one made of stretched sprue (E), and I made a new tail wheel hubcap from .010" styrene. I cut off the rudder control horns and replaced them with more petite ones made of .020" styrene. The stretched sprue rudder cables lead from the horns into drilled-out slots in the fuselage. I replaced the kit elevator and rudder trim tab horns and activator rods with .010" styrene and stretched sprue.



for the cockpit vent hose, and scrap styrene for the gear uplocks.

The landing gear doors were cut down to an accurate length and have structural details added inside. I thinned the main gear strut torque link scissors and drilled holes in them with a small burr and knife blade. The towing and tie-down lugs were drilled out and the struts detailed with extra bolts, nuts, jack points, and grease fittings made of sprue (F). I made new hydraulic brake lines from white glue-soaked threads, and made landing gear door closure rods from sprue. I accentuated the main gear tire treads with a razor saw (G,H); although it's tedious, the results are worth the effort.

I replaced the six aileron hinges with thinner hinges, control horns, and rods made of .010" styrene and stretched sprue. I used Detail Associates' HO scale 3 1/2" eyebolts for mooring rings under the wing tip (I).

The wing trailing edges just in front of the ailerons on the lower surface were beveled to eliminate an unauth-

entic butt joint, and jack points under the wings and aft fuselage were made of sprue. I cleaned up the fuel filler caps and made better landing gear lock inspection windows by covering red-painted sprue locking indicators with Micro Kristal-Kleer, followed by a clear gloss coat.

I cut open the landing light compartments and boxed them in with .010" styrene (J). I used lenses from M. V. Products' headlight and marker lens package (No. LS202) for the landing lights. A small red marker lens was used for the passing light in the left landing light compartment.

I made a new pitot tube from a hypodermic needle, drilled a vent hole in the left wing leading edge, and added a wire handle to the retractable step in the left forward fuselage. I made ten sprue vent and drain tubes under the wing and cowl, as well as the relief tube venturi under the belly. I filed and sanded the antenna mast to an airfoil shape and used a No. 80 drill to make a hole at its tip for the antenna line installed after painting.



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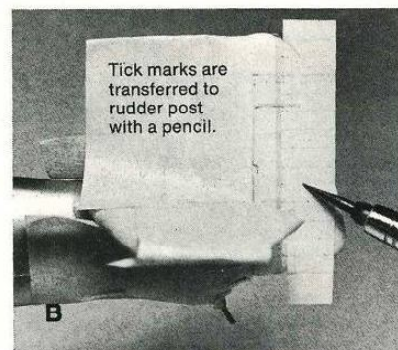
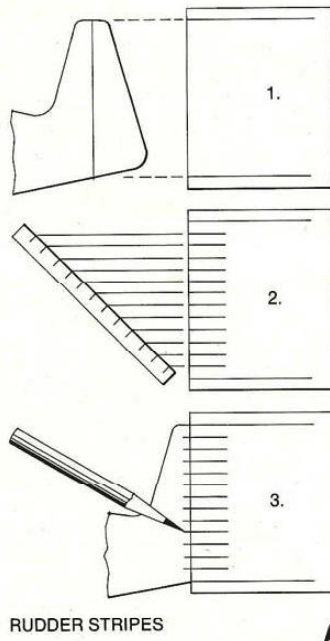
**Step 5. Silver finish.** I masked the cockpit area with a paper hood and Luma Liquid Mask, and airbrushed the entire model with non-buffing Spray 'n' Plate. Spray 'n' Plate is no longer produced, but Metalizer has picked up the formula and produces its own Aluminum Non-buffing paint (No. 18).

When the base coat had dried, I checked for scratches, nicks, and other flaws and filled them with putty, sanded, and buffed again.

Next, I applied a second coat of Spray 'n' Plate and let the model dry for several days. I painted the cowl white and, when dry, masked and painted the anti-glare panel.

When the silver had dried hard, I masked off the panel around the exhaust stack and sprayed it a slightly darker shade of silver, just enough for contrast. All the control surfaces on the AT-6A were fabric covered, so I airbrushed them with Floquil Platinum Mist (M120), which gives a good impression of silver-doped fabric. The trim tabs were all metal, however, so I masked them off to preserve their Spray 'n' Plate finish.

Next, I sprayed the wing walks flat black. I used high pressure so the paint hit the surface almost dry and built up a rough, pebble-like texture which looks like nonskid wing walk paint.



**Step 6. Rudder stripes.** I think painted rudder stripes look better than decals even though they take more time. I masked and sprayed the rudder white and then masked for the red rudder stripes. The illustration (A) shows the technique for spacing the seven red stripes on the rudder. First, I measured the height of the rudder, transferred that measurement to a piece of paper, and drew two horizontal lines. Next, I divided the measurement into 13 equal segments by placing a ruler diagonally on the sheet of paper until 13 convenient increments (inches, centimeters) fell within the two lines, and made small pencil marks at each point. Using this guide, I made small marks on the rudder post (B) and masked off the six white stripes, making sure that the tape strips from both sides matched at the trailing edge. After the stripes had dried I painted the vertical blue stripe (C).





**Step 7. Decals and final details.** For decals I used Monogram's stenciling and early U. S. insignias from A. I. R. Underwing "U. S. ARMY," serial numbers, and fuselage number were from Microscale. The numeral 2 on the fuselage and rudder had to be modified to match the style in the photo of the original aircraft. I carefully cut the block-style 2 apart and positioned the segments into the diagonal-stroke numeral.

I used Spray 'n' Plate Sealer for the clear gloss coat, but found it took at least two weeks to dry. This overcoat blended the decals into the silver finish and equalized the reflections. Some toning down of the metallic sheen was unavoidable, but not objectionable. I masked around the wing walks and cowlings and fuselage anti-glare panels, and sprayed them with Testor Dullcote.

After the overcoat had dried, I attached the engine and

cowl with super glue, then added the landing gear and other fragile parts. I used a technical drawing pen and gray ink to outline all control surface hinge lines and trim tab outlines. This adds form, shadow, and dimension for a realistic look.

I vacuum-formed the canopy and painted, cut, and installed it open on the fuselage. The overlapping canopy sections look realistic for the scale. The front and rear canopy opening handles were made of sprue painted red, and the rearview mirror on the inside windscreen bow was cut from a mirrored sequin available at craft stores.

Since I had sanded off the position lights on the wing tips and vertical fin, I replaced them by drilling a shallow hole in each light position and carving them into a teardrop shape with a No. 11 blade before painting the model. After the model was dry, I filled each hole with Micro Kristal-Kleer; I mixed in food coloring, red for left, green for right lights. Each light required several applications of Kristal-Kleer to fill any shrinkage. I gave each light a gloss coating when the Kristal-Kleer had dried, resulting in realistic transparent lenses.

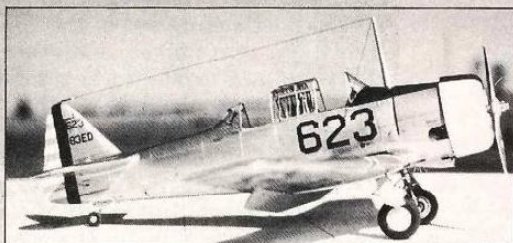
I used super glue to anchor transparent nylon sewing thread antenna wire. I drilled holes in the fin tip, antenna mast, and sprue insulator set in the right fuselage side. The wire was painted flat black and the ceramic insulator on the wire was made with a tiny drop of Micro Kristal-Kleer painted flat white. Smoke from a cigarette was used to bring the nylon antenna taut. This method works well, but get too close and the nylon melts; about 3" below the line gives the best results.

**FSM**

## SOURCES

- Chart-Pak, Leeds, MA 01053.
- Detail Associates, P. O. Box 197, Santa Maria, CA 93456.
- Duro Woodhill Chemical Corp., Cleveland, OH 44128.
- Evergreen Scale Models, 1414 127th Place, N. E., Suite 107, Bellevue, WA 98005.
- K & S Engineering, 6917 West 59th Street, Chicago, IL 60638.

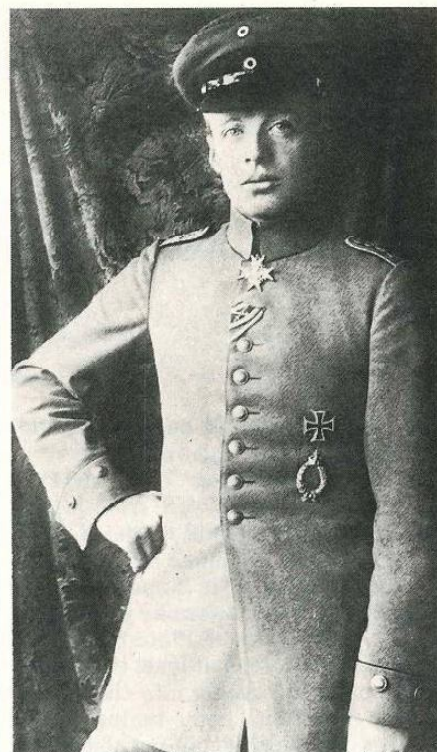
- Luma Liquid Mask, Steig Products, Lakewood, NJ 08701.
- M. V. Products, P. O. Box 6622, Orange, CA 92667.
- Metalizer Products, 1019 Bonita Street, Tustin, CA 92680.
- Minnesota Mining & Manufacturing Co., St. Paul, MN 55101.
- Waldron Model Products, 1358 Stephen Way, San Jose, CA 95129.



Bob shot pictures of his completed model outdoors. The natural sunlight and unobtrusive background lend realism to the scene. The nylon sewing thread antenna shows up well in these photos.







National Archives, 18-P-228289

(Above) This early portrait of Oswald Boelcke shows a more youthful face — the war was soon to age him dramatically. Boelcke died in a midair collision at the age of 25. (Left) The author's foot-tall figure was built from balsa, Durham's putty, and epoxy putty. Here, Boelcke is describing his latest kill. Note powder stains on the face and clean areas that were protected by the goggles.

## "Is my chin black?"

Modeling World War One ace  
Oswald Boelcke in 1/6 scale

BY ROBERT KARR

**M**ENTION WORLD WAR ONE aviators to most people and you'll likely hear "Oh yeah, the Red Baron." Some might know the name von Richthofen but aside from the hard core ace addict, few know of Oswald Boelcke, von Richthofen's teacher.

Oswald Boelcke, born May 9, 1891, was one of the pioneering fighter pilots. Early in the war, in July 1915, he deliberately flew his lumbering Albatros CI two-seater in a manner that allowed

his machine gun equipped observer to down a French Morane.

During this same period, the Fokker EI monoplane began appearing at the front in small numbers, being doled out in ones and twos to the standard two-seater observation squadrons. The Fokker, being armed with a forward firing synchronized machine gun, was a revolutionary weapon, succeeding on a practical level where previous Allied and German attempts had not.

With the mechanical dilemma solved, new tactics were needed to efficiently

wield this weapon. The thoughtful and prescient Boelcke was assigned one of his unit's new Fokkers, and together with squadron mate Max Immelmann, invented the rudiments of aerial fighting. Attacking out of the sun, using height advantages, and other tactics were new ideas in the summer of 1915. Through the rest of the year, these two worked hard and flew often, experimenting constantly. On January 13, 1916, when both had 8 victories, they were awarded the Pour le Mérite, Germany's highest decoration.

**The toll of war.** The heady pioneering days were soon over, and by the summer of 1916 Immelmann was dead and the Fokkers were outclassed. But rejuvenation was on the way in the form of powerful twin-gun Albatros DIs and DIIs. Once again, new weapons meant the need for new ideas. Boelcke, the idea man, was called on to organize one of Germany's first fighter units — Jagdstaffel 2. A young Prussian nobleman, Manfred von Richthofen, was one of the fliers chosen. In the autumn of 1916, Boelcke drilled and trained and worked his charges in the new art of aerial combat.

Despite his beliefs in team opera-



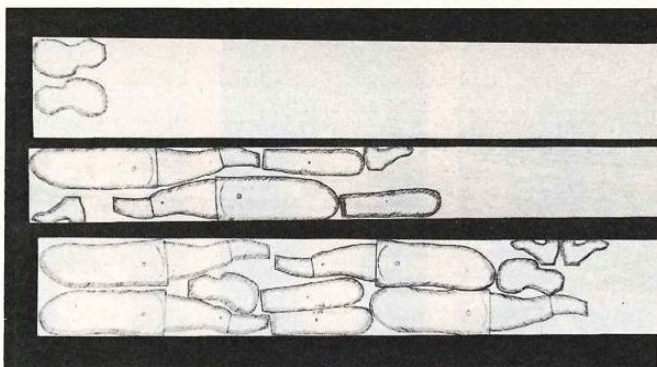
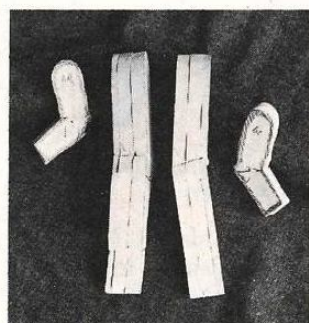
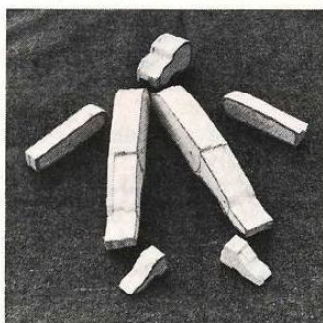


Fig. 2. The master patterns were traced onto sheets of balsa. Robert used (top to bottom) 1/8"-, 1/4"-, and 1/2"-thick sheets.

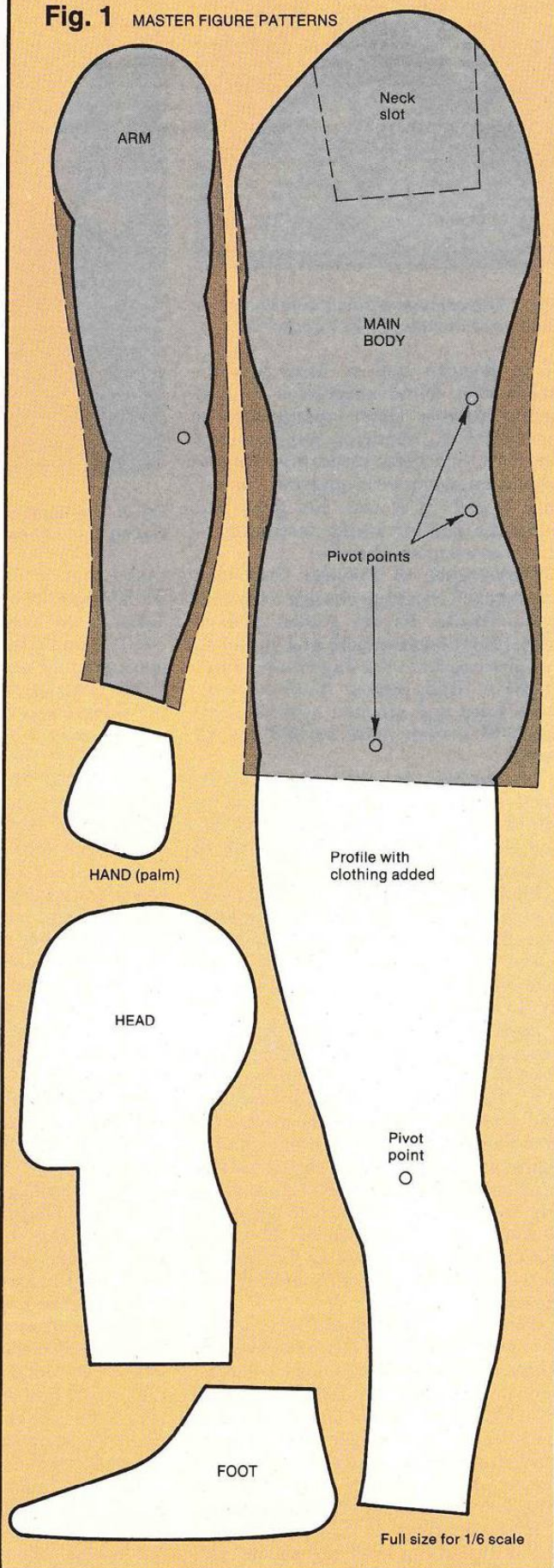


(Left) Fig. 3. The balsa cutouts were laminated with Elmer's glue, clamped together, and dried overnight. (Right) Fig. 4. The hips and elbows were cut apart and rejoined in their final positions. The knees were not bent on this figure.



Fig. 5. The wrinkled sleeves and trousers were built up with Durham's putty and carved before setting completely.

Fig. 1 MASTER FIGURE PATTERNS





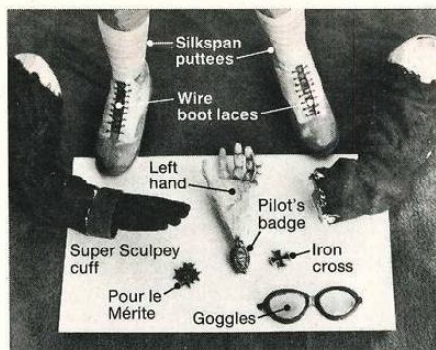


Fig. 6. The arms and small details before addition to the figure. Note goggles.

tions, Boelcke had a "lone hunter" streak that found expression in solo sunrise patrols. Upon landing after a morning lark, admiring pupils would ask if he had been successful. He answered question with question: "Is my chin black?" If it was, his guns had fired, the powder stains testifying to the dispatch of another foe.

Photographs of Boelcke from this time show a shocking change from earlier portraits. In the golden Fokker days, his face was smooth and youthful, but pictures from the Jagdstaffel 2 era reveal a tired, almost haunted man. Deep lines and pinched eyes are evidence of a man aged beyond his 25 years.

On October 28, 1916, Boelcke collided with a squadron mate during an attack on a flight of British D. H. 2s, and this pioneering theorist, with 40 victories to his credit, fell to his death.

**Planning the figure.** The phrase "Is my chin black?" guided this project, and Boelcke is shown just after his morning patrol. He's doffed his headgear, and is demonstrating his latest kill to his students.

Boelcke's face was derived from the superb photos of Boelcke in Time-Life's *Epic of Flight* volume, "Knights of the Air." Page 126 has a perfect profile, and profiles are rare yet necessary for facial modeling. The anatomy of this figure was a little easier for me as I've constructed hundreds of statuettes in the last 10 years. I've developed my master anatomical patterns from two books: *Anatomy* by Walter Foster, and *Drawing the Head and Figure* by Jack Hamm.

*The Arco Color Series Army Uniforms of WW I* and *The Fighters* by Thomas Funderburk yielded information on the uniform and flying accessories. The leather flight coat is of uncertain design. Apparently there was no standard garment during the first half of the war and photos show a host of cuts, lengths, and button arrangements.

**Body building.** I began by tracing the body outline from my master pattern, Fig. 1, drawing the uniformed



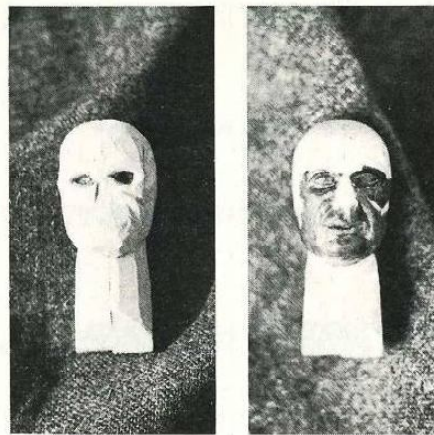
Fig. 7. The flight coat was made from two pieces of rolled-out Super Sculpey.

shape over it. Using carbon paper, I transferred my completed design to balsa. In this large (1/6 real size) scale, two 1/2"- and one 1/4"-thick sheets were laminated for each body half. Figure 2 shows the pattern laid out on the wood, the thicknesses from top to bottom being 1/8" (only 2 head sections), 1/4", and 1/2". I cut out the pieces with a Dremel jigsaw, glued them together with Elmer's glue, clamped them together with rubber bands, and allowed them to dry overnight, Fig. 3.

Next, I cut through the joints and posed the elbows, hips, and neck, resetting limb positions with Elmer's, Fig. 4. (No knee bending was needed on this figure.) I used No. 11 X-acto blades to rough out the shapes. The body was built in right and left halves to make it easier to work the inner legs. After the legs were roughed out, I glued the halves together and carved the upper body. When carving clothes, I try to imagine the body underneath—that keeps me from cutting the wrinkles too deep.

After roughing out, I built up the puffy upper trouser legs and the arm wrinkles, Fig. 5, with Durham's Rock Hard Putty,\* a water mix putty, available at hardware and paint stores. Durham's is easy to use; just slop on a big glob, leave it alone a couple of minutes (depending on the humidity), and carve. One of its amazing properties is that during the first 45 minutes of its curing time it has the consistency of hard soap and can easily be carved and shaved with a worn No. 11 blade.

Working quickly, there's time to use wet fingers and brushes to smooth the Durham's like clay, reducing the need



(Left) Fig. 8. The head was roughed out of balsa and the eye sockets drilled out. (Right) Fig. 9. Boelcke's facial features were sculpted from Super Sculpey.

for heavy sanding—when it's dry, Durham's is really hard. The putty takes all kinds of paint and glues with Elmer's or super glue. (It also makes great jagged rocks—just whack a dried piece with a hammer.) The wet putty won't stick to plastic, but tube glue will bond dried pieces.

I sealed the arms and body with a mix of 90 percent lacquer\*\* and 10 percent talcum powder. This was lightly sanded after a few minutes' drying time. Then I brushed on a coat of 40 percent lacquer and 60 percent talc and sanded this an hour later. The lacquer-talc mix sands with fine sandpaper, gives a slick surface with no grain, and blends the areas where the Durham's meets the wood.

**Details.** Figure 6 shows the small parts that were carved and finished separate from the torso. The hands were rough balsa armatures with skeletal fingers and thumbs added. I made the gloves using Durham's and lacquer-talc, and then stippled on thick paint for the worn leather texture.

I carved the pilot's badge from a hunk of dried Durham's and scribed and scratched the details with a needle. I used Pactra's Aero Gloss Silvaire aluminum dope, washed with thin Pactra flat black enamel to simulate the pewter color.

I cut the Pour le Mérite and the Iron Cross from .030" sheet styrene and painted them with enamels. The high gloss of the Pour le Mérite was done with clear lacquer over the paint, working quickly yet carefully, using few brush strokes to prevent lifting the paint below. I vacuum-formed the goggles from clear sheet plastic over a carved balsa and Durham's master.

I used Durham's for the boot uppers. Occasionally a piece of putty will break

\*Donald Durham Co., Des Moines, IA 50304.

\*\*A-1 Clear lacquer, Standard Brands Paint Company, Torrance, CA 90509.





Fig. 10. Balsa ears and Durham's putty hair finish the head.



Fig. 11. Robert's excellent painting gives life to the war-torn face of the figure.



Fig. 12. The flying cap was made from Bondo epoxy putty and pushed into the figure's left hand.

off when it's applied in thin layers — I simply super glue the chips back in. If there is a large crack, I apply a patch of new wet putty. Once the boots had dried, I drilled the shoelace holes, taking care to prevent chipping. I made the laces from copper wire removed from an automobile voltage regulator. I'm not sure of the diameter, but it seems close to .005". I twisted two strands together for laces stock, cut individual crosspieces, bent them into staple shapes, and inserted them into the boot holes, securing them with super glue.

The puttees are two laminations of heavy silkspan\* model airplane covering material, cut into strips, wound around the lower legs, and attached with Elmer's.

Figure 6 also shows how I got the hollow sleeve effect. I cut the arms behind the wrist, and built the hands with the wrists included. I glued the hands on with Elmer's, and made the cuffs from Super Sculpey\*\*. This clay-like material was rolled thin, the cuff cut out, and then baked in the oven at 325 degrees for about ten minutes. (Super Sculpey instructions suggest baking 15-40 minutes, depending on piece size, but when pieces this thin are baked 15 minutes, they often char.)

After baking, the cuffs were still flexible, so I formed them around the model's wrists with my fingers. The material is hot — care is called for — but it's manageable and not painful. After the Super Sculpey cools, it's set for good. I reinforced the joint with

Elmer's, and blended the cuffs into the sleeves with Durham's and thick paint. Figure 6 shows the cuff on Boelcke's right arm before blending.

The flight coat was made from rolled-thin Super Sculpey, the outline cut, baked, and formed around the body. To simplify the job of handling the wobbly unbaked material, I made the coat in two halves, Fig. 7. I didn't make the full back of the coat from Super Sculpey because it's not cheap (about \$5.00 per pound); instead, I built up the back with Durham's, as full relief modeling was not needed here anyway.

The lower flap of the tunic was made from a blend of two brands of epoxy putty; Duro E-pox-e Ribbon\*\*\* flexes when cured and Bondo Epoxy Ribbon\*\*\*\* is brittle, but together they're just right. I kneaded the two separately, then kneaded equal amounts together. I rolled out the wad on window glass, cut it to shape, allowed it to stiffen a few minutes, peeled it off, and wrapped it around the model's waist where it finished curing. When set, the epoxy was feathered into the rest of the figure with sanding, lacquer-talc, and more sanding. I added the tunic pocket flaps from the same mix.

I painted the completed tunic and the inside of the coat before gluing the coat to the body. My uniform color was made from Pactra Scale Flats, 50/50 black and white, with a few drops of navy blue and yellow. I painted the inside of the coat black, and slightly toned it to a dark brown with minute amounts of red and yellow. When dry, I buffed the coat pieces to a leathery

sheen with a paper towel. The coat halves were now glued to the figure with super glue and Testor tube cement. The completed arms were glued to the body with Elmer's and the seams, shoulders, and back were filled and built up with Durham's and lacquer-talc.

**The head.** Consulting the Time-Life book almost constantly, I carved the head block to an approximate skull shape with sockets for the eyes, Fig. 8. Boelcke's main features were the facial lines and a squarish head. These were worked in next, Fig. 9.

The eyes were fired balls of Super Sculpey, super glued into the head. I carved the nose to shape from a balsa block, primed it with baking soda, and super glued it to the face. After this, the eyelids, cheeks, and lip area were built up in place using Super Sculpey, baking the entire head afterwards. (This can be done a section at a time because Super Sculpey can be built up, layer after layer, refiring after refiring.)



Fig. 13. Uniform details. Note shirt peeking out above the collar of the tunic, fur collar of the flight coat, and the Pour le Mérite at Boelcke's throat.

\*Sig Manufacturing Co., Inc., 401 South Front Street, Montezuma, IA 50171.

\*\*Polyform Products Co., P. O. Box 119, Schiller Park, IL 60176.

\*\*\*Loctite Corporation, Cleveland, OH 44128.

\*\*\*\*Dynatron/Bondo Corporation, Atlanta, GA 30318.



The ears were carved from 1/8" sheet balsa, glued on, and feathered into the head with Durham's and thickened Pactra flat white.

I made Boelcke's close-cropped Prussian hair from a thin layer of Durham's, shaped and scribed with an old No. 11 X-acto blade, Fig. 10. Before brushing on the putty, I drilled holes all over the back and top of the head to give the Durham's something to grip. The eyebrows are scribed epoxy.

These different materials and facial features were unified and blended with thickened paint — two coats, with sanding in between. I lightly stipple-textured the beard area to indicate hair follicles (in 1/6 scale such details become visible). From the start, I had to keep the facial expression in mind. I wanted to show a tired man, with dull, sunken eyes, straining against the fatigue that would soon claim him.

**Finishing up.** I glued the head into the socket between the shoulders and let it set overnight. A 60/40 blend of Duro and Bondo epoxy putties was used for the lapels, coat pocket openings, and coat wrinkles.

Next, I painted the head, using a blend of white, red, yellow, and a tiny bit of blue. I painted the whites of the eyes off-white, toned down with blue-gray to avoid the glazed, terrified look of pure white eyes. I indicated the tear ducts with a drop of pink and the irises with light medium blue, white highlights, and black pupils, Fig. 11.

I painted the hair a yellowish tan with a brown wash, followed by white and yellow dry-brushed highlights. Using the goggles to mask the eyes, I airbrushed the grit, grime, and dirt on the face with flat black, paying special attention to the chin so the model would live up to its title.

I made the flying cap from Bondo epoxy putty because it cures to a nice dark brown, needing only a black wash to finish it. The cap was just a wad, stretched to represent the collapsed cap shape. I allowed it to stiffen for half an hour, then pushed and positioned the cap into the figure's left hand where it finished hardening, Fig. 12. The chin buckles and goggle straps were cut from thin preset Duro epoxy putty. I keep cured sheets of this stuff around as it cuts easier and cleaner than .010" or .020" styrene and needs no sanding or filing. It's flexible, so if it gets bumped it won't break — it just springs back into place.

After the face dried, I made a shirt collar (visible under the tunic collar) from rolled epoxy, Fig. 13, and painted it white. Next I made the tunic collar from rolled Super Sculpey, hot-formed in place around the neck. This was sanded lightly and the base was painted uniform gray.



**Fig. 14.** The 3/4" pine base is landscaped with sawdust, chopped twine, and pebbles made of Durham's putty.

I airbrushed the uniform shading using a dark greenish gray in the wrinkle troughs, highlighted with dry-brushed light gray. The puttees were painted the base gray slightly whitened to accent the difference between the trouser legs and them. I slobbered on a thin black wash to top out the wrappings.

The boots and leather coat were colored with flat black, toned down with red and yellow; even the blackest leather has a brownish cast depending on lighting and wear.

I molded the fur collar in place using a wad of Durham's around the neck. I carved, jabbed, stabbed, and tortured it during the soapy stage. When dry, I brushed on a medium bluish gray, followed by a black wash and white dry-brushing.

I made the tunic buttons from 1/8" Plastruct\* tubing with a round toothpick core, carved and sanded on the front, and 1/4" of the toothpick left on the back to form a peg. These pegs were glued into drilled buttonholes in the tunic and colored with Silhouette dope with a black wash.

I painted on the red tunic piping, hung the Pour le Mérite on a tiny wire, and super glued the Iron Cross and badge to the body. The black, white, and red ribbon was made of pre-cured Duro sheet, one end fitted into a horizontal slot on Boelcke's breast, the other tucked into the tunic over the seventh button from the bottom.

I buffed the boots, coat, and gloves, the latter getting a light dry-brush of tan to show wear. The boots were lightly airbrushed with brownish yellow.

**The base.** I made a base from 3/4" pine, smeared Elmer's on the top, and packed on coarse sawdust, Fig. 14. The rocks and pebbles are Durham's, whacked with a hammer. The grass is chopped macrame twine, stuck on with Elmer's, and given a heavy dose of



## Meet Robert Karr

Robert is a sculptor and painter living in Bell Gardens, California, near Los Angeles. He has built models for members of the rock bands Cheap Trick and Fleetwood Mac (that mahogany Turner guitar on the inside jacket of Lindsay Buckingham's solo album *Law and Order* is actually a 9" model Robert built).

Robert's interests and inspirations are late Roman-early Medieval northern European history (Celts, Anglo Saxons, and Vikings), aviation history, and the images of Disney and J. R. R. Tolkien.

Testor Dullcote to hold any errant bits in place.

I drilled a 1/4" hole through the base where the left foot goes, then drilled a corresponding hole 1 1/2" up into the left heel and leg. I glued a 2 1/8"-long 1/4" dowel into the base hole; the figure's leg fits over this peg, but it's not permanently fixed.

I painted the base light brown for the soil and olive for the grass. Then I applied a medium gray-brown wash to the soil and rocks, with a highlight of dry-brushed tan. The grass got a wash of dark olive with highlights of light green and yellow.

When the ground was set, I gave the edge of the base a couple of heavy coats of flat black, and buffed it to a slight sheen when dry. I attached felt pads to the bottom of the base.

Finally, I lacquered the eyes to add the spark of life, mounted the figure on its peg, and relaxed! Not a bad investment for 60 hours, and yes, Boelcke's chin is black!

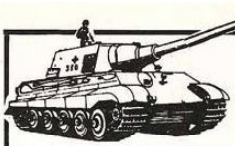
**FSM**

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- Hamm, Jack, *Drawing the Head and Figure*, Grosset and Dunlap, New York, 1963.

\*Plastruct, 1161 Monterey Pass Road, Monterey Park, CA 91754.





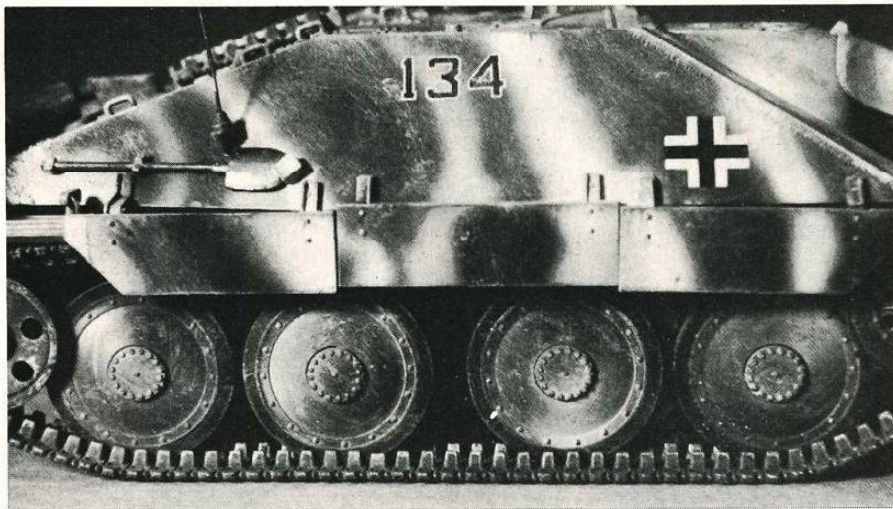
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F-20 Tiger Shark	4.12			Junkers Ju86 E-2	5.59
Ki-48 (Lily)	5.25			RF-4F Thunderflash	4.50
Mitsubishi F-1	5.25			F-5E Tiger II	4.50
Mitsubishi T-2	5.25			Heinkel He 111	4.50
F-8E Crusader	5.25			C-47 Skytrain	2.89
Blue Impulse T-2	5.25			Focke-Wulf Fw190 D-9	5.59
F-15J Eagle	5.25			Junkers Ju86 E-2	5.59
AH-64 Apache	5.25			RF-4F Thunderflash	4.50
Jaguar GR.1	5.25			F-5E Tiger II	4.50
Weapons Set 1	3.37			Heinkel He 111	4.50
Weapons Set 2	3.37			C-47 Skytrain	2.89
Weapons Set 3	3.37			Focke-Wulf Fw190 D-9	5.59
Weapons Set 4	3.37			Junkers Ju86 E-2	5.59
Ground Set	3.37			RF-4F Thunderflash	4.50
Betty w/Onka	8.25			F-5E Tiger II	4.50
GBN1 (Rita)	10.89			Heinkel He 111	4.50
P2V-7 Neptune	10.50			C-47 Skytrain	2.89
A-7A Corsair	3.75			Focke-Wulf Fw190 D-9	5.59
A-6A Intruder	4.12			Junkers Ju86 E-2	5.59
Me Bf 109E	2.25			RF-4F Thunderflash	4.50
Me Bf 109G	2.25			F-5E Tiger II	4.50
Raiden Jack	3.19			Heinkel He 111	4.50
UH-1D Iroquois	3.19			C-47 Skytrain	2.89
Jaguar GR.12	5.25			Focke-Wulf Fw190 D-9	5.59
F-15C w/Stores	4.50			Junkers Ju86 E-2	5.59
A-4E/F Skyhawk	2.62			RF-4F Thunderflash	4.50
F-106A	4.50			F-5E Tiger II	4.50
P-38 J/L	3.75			Heinkel He 111	4.50
Spitfire Mk1	2.25			C-47 Skytrain	2.89
P-51D Mustang	2.25			Focke-Wulf Fw190 D-9	5.59
Ki 43 Oscar	3.19			Junkers Ju86 E-2	5.59
Ki 84 Frank	3.19			RF-4F Thunderflash	4.50
Ki44 Tojo	2.25			F-5E Tiger II	4.50
Ki61 Hien Tony	2.25			Heinkel He 111	4.50
Zero Type 21	2.25			C-47 Skytrain	2.89
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				Junkers	





Photos by Jeff Ollian, drawing by Bob Connors

Bob's techniques make it easy to paint road wheels no matter what the size. Here, the road wheels on a Hetzer get the treatment.

# An easy way to paint road wheels

Simple tips to speed up a tedious chore

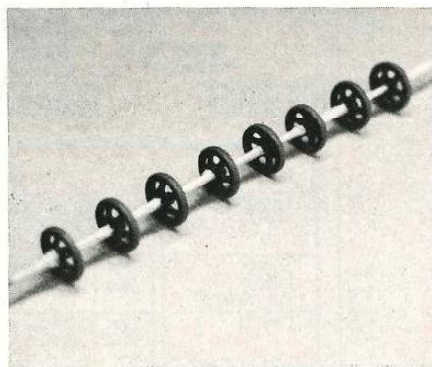
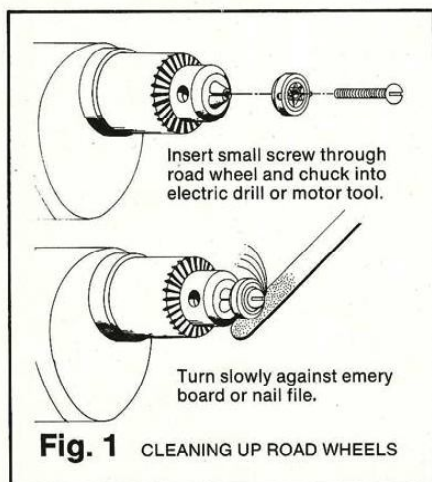
BY ROBERT SKURDA

ANYONE WHO HAS assembled a few armor kits has undoubtedly spent many hours brush painting the tires on road wheels, and has probably said, "There must be an easier way." Here are a few simple techniques to take the drudgery out of painting road wheels.

Before beginning, you will have to stray from the established method of assembling armor kits. Most kit instructions call for early assembly and mounting of the wheels, usually in the first few steps. Skip these steps, but

build the model according to the rest of the instructions. To make it easier, never mount the wheels until the model has been completely assembled and painted. I usually paint both the wheels and tracks just before weathering the finished model.

**Cleanup.** First remove all wheels from the trees and prepare the wheels for painting by removing flash and mold seam lines. An easy way to do this (if the wheel has a hole through it) is to insert an appropriate size screw into the hole, chuck it in an electric drill or motor tool, and run the wheel lightly against an emery board or nail file, Fig. 1.



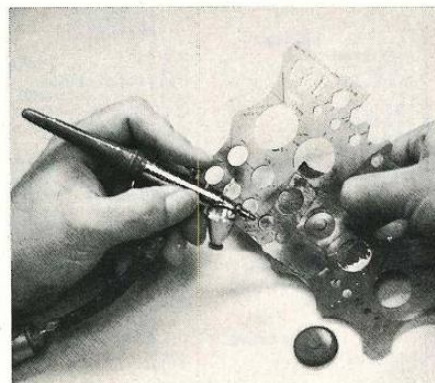
**Fig. 2.** Road wheels are placed shish kebab-style on a wire. Bob used masking tape wrap as spacers, allowing sufficient room between wheels to ease painting.

If the wheels have holes through them, they can easily be skewered together like a shish kebab. Start with a length of wire slightly smaller in diameter than the hole in the wheels and wrap tape around one end of it. Slide on a wheel, a spacer, then another wheel and so on until all the wheels have been skewered, then tape the open end of the wire, Fig. 2. Almost anything can be used to space the wheels — just allow enough space between the wheels so that the entire inner face can be sprayed.

Wheels with holes that don't go all the way through can be sprayed individually or in groups by mounting them on pieces of wire pressed into a piece of plastic foam. Next the wheels are painted flat black. After spraying both sides of all the wheels, set them aside to dry.

**Circle template.** I use a circle template to mask off the rubber area while painting the wheel color. This useful tool is available at most art supply stores. When shopping for a circle template, look for one that has holes ranging from  $\frac{1}{16}$ " through  $1\frac{1}{2}$ " in increments of  $\frac{1}{32}$ " or so. Several good templates are C-thru No. T-800, Timely Nos. T-88 and T-89, and Pickett No. 1204. Prices range from \$2.00 to \$6.00, but ask the clerk if they have any damaged or off-centered templates that they can discount.

After the black paint has dried completely, carefully remove the wheels from the skewer and place them in a box lid. Place a wheel behind the template and search for the hole that is the closest to the diameter of the inner wheel. To keep overspray from ruining the black outer wheel area, I cover the surrounding holes with tape. With the wheel centered in the hole (I usually clamp the wheel and template together between my fingers and thumb), airbrush the wheel with the overall vehicle color, Fig. 3. Keep the airbrush spray perpendicular to the template



**Fig. 3.** Here's Bob's circle template technique in action. Note adjacent holes covered with masking tape.





## Meet Robert Skurda

Bob is a draftsman living in Detroit and has been a modeler for 20 years. He traveled throughout Europe and North Africa where he visited many military museums, gathering first-hand information for his modeling.

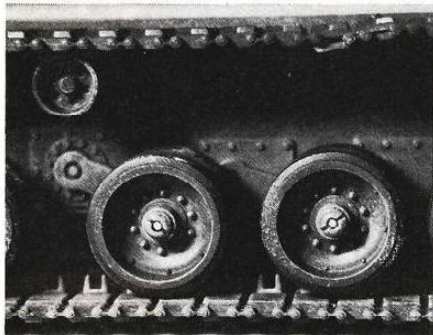
His wife reports that he is prone to give common household items a second or third glance. Once they find their way into his workshop, they often become part of an armored vehicle model.

Lately, he says, nothing out of the box satisfies him; it must be scratch-built and include even the smallest detail. His scratchbuilt M1 Abrams tank was the subject of the March/April 1984 FSM Showcase. Bob's models have won numerous model building awards in both the U. S. and Canada, and some are on display at the Squadron Shop in Detroit.

and use low air pressure to prevent paint from seeping underneath the template. After the wheels have dried enough to be handled, repeat this process with the other side of each wheel. The circle templates can be cleaned with thinner after the painting session.

If your vehicle is camouflaged, just repeat the process for each color. After touching up any overspray with a brush, mount the wheels and begin to weather. I hope that by following these simple steps you will find painting road wheels a much easier part of armor modeling.

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The circle template makes it easy to mask off the rubber tread of road wheels, but beware; not all tracked vehicles had rubber tread on road wheels.

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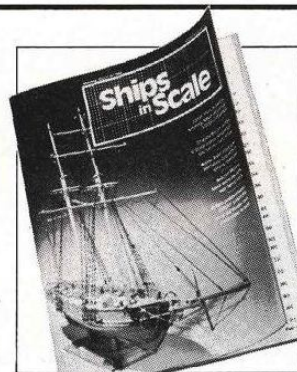
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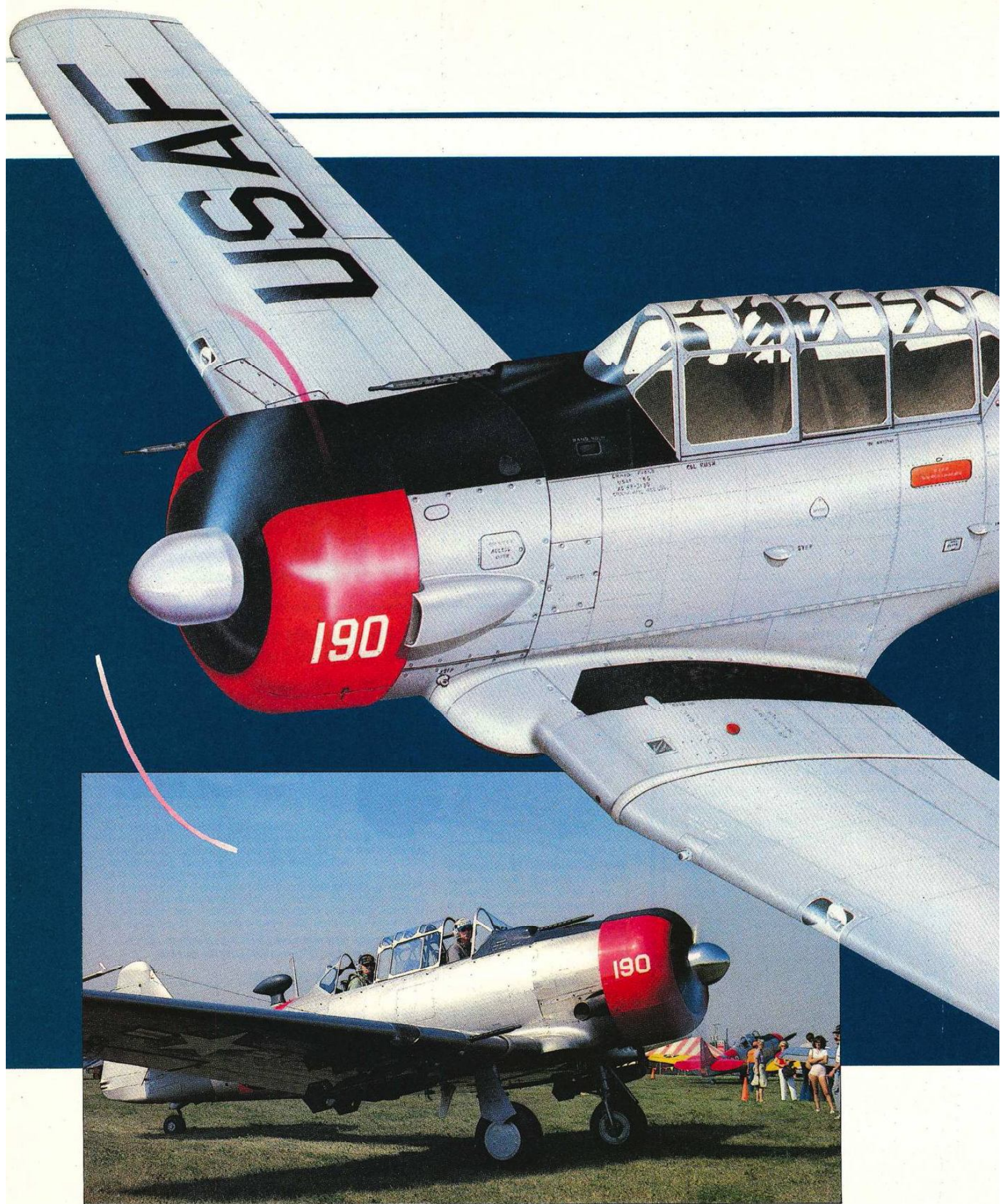
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FSM 15S







# Research data: North American T-6

A Texan with muscle

BY KEN SOMMERFIELD

**T**HE NORTH AMERICAN AT-6 has been around since 1935, and this year it celebrates 50 years of flying in the skies of over a dozen countries. It was "home" to thousands of military student pilots at the outset of World War Two. Called the Texan, SNJ, and Harvard, it was the most widely used training aircraft in the history of aviation.

The Texan's construction and flying characteristics allowed it to function as either fighter, bomber, or reconnaissance aircraft, operating from airstrips and aircraft carriers. The Army designation "AT" stood for advanced trainer; after WWII, all training aircraft were included in the simplified designation "T" for trainer. "SNJ" was the Navy designation; "SN" stood for Scout Trainer and "J" was the letter designator for the manufacturer, North American.

After WWII, many T-6s were put into storage and some were sold to civilians. The U. S. Air Force still used the plane as a trainer, and needed an updated version to meet new requirements. This need was filled by remanufacturing old T-6s and SNJs from storage depots, but many had to be bought back from civilian owners. Starting in 1949, 2,068 such aircraft were remanufactured and given the designation T-6G. One of these, S/N 49-3190, is the subject of this article. (See Bob Steinbrunn's article on detailing Monogram's 1/48 scale Texan on page 22.)

**The history of 49-3190.** Every summer, during the Experimental Aircraft Association Convention at Oshkosh,

This beautifully restored T-6G Texan is one of many North American trainers scattered around the country. Dozens of restored Texans and SNJs can be seen at the convention of the Experimental Aircraft Association in Oshkosh, Wisconsin, every summer.

(Left) The author's subject, T-6G 49-3190, rests in the sun at 1981 convention. Note two restored yellow Navy SNJs in the background. (Far left) Crew aboard and the Pratt & Whitney R1340-AN1 engine warmed up, 49-3190 prepares to join dozens of other T-6s in formation flyovers.



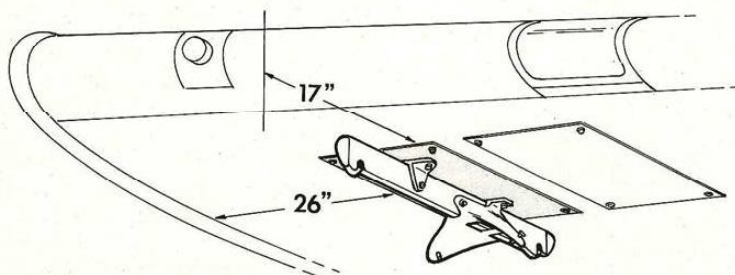
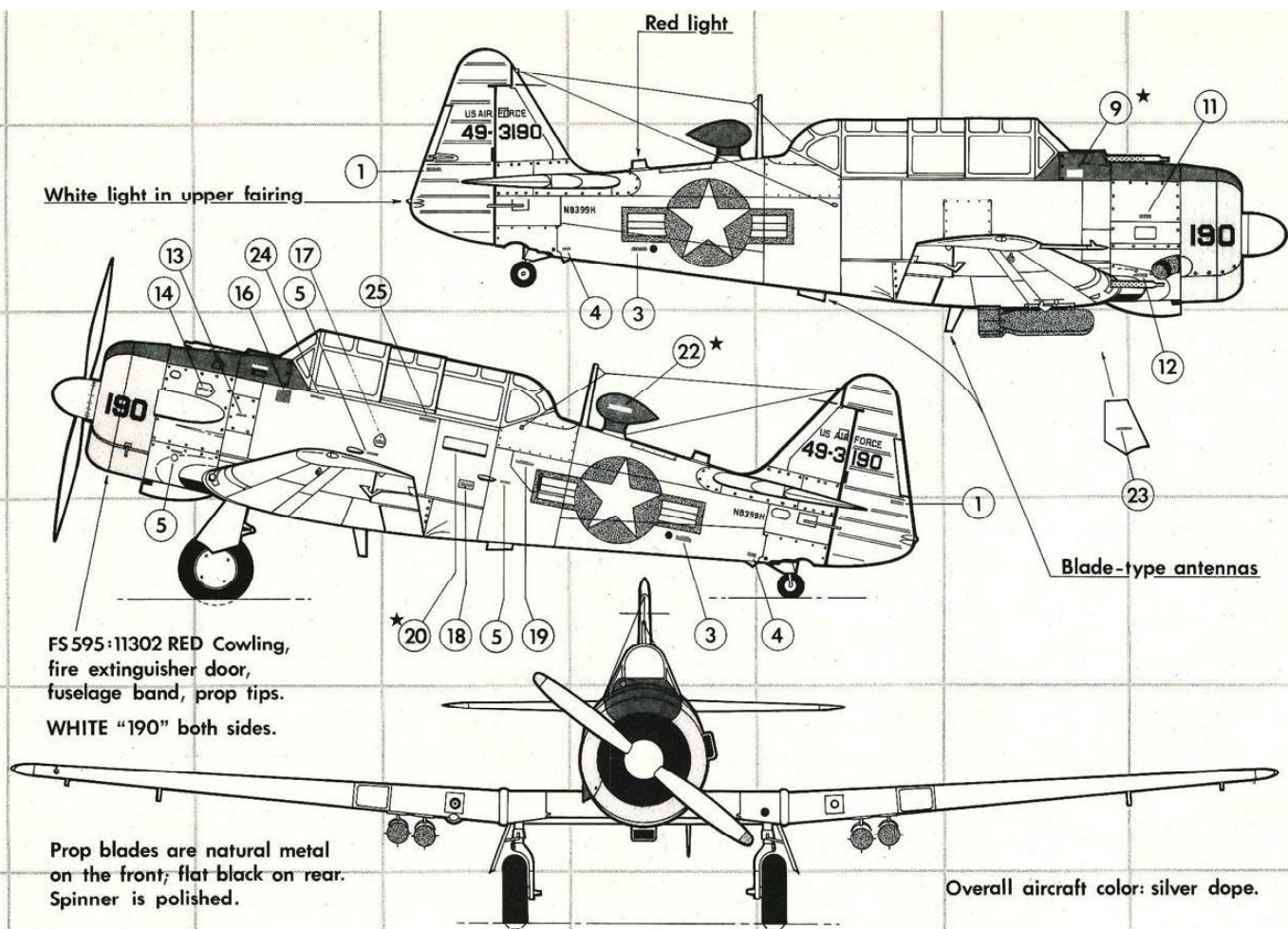


Fig. 1. Diagram showing position of inboard bomb shackle mounting plate - 26" out from wing joint fairing, and 17" back from wing leading edge.

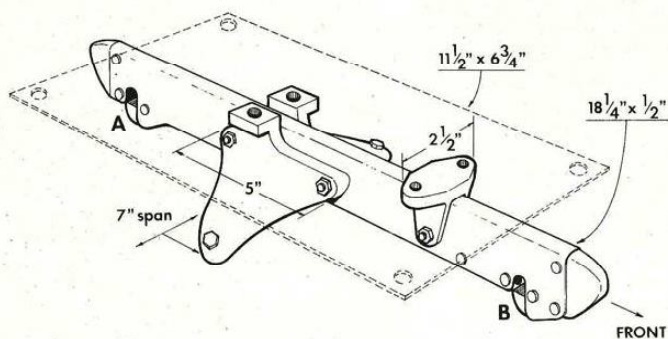


Fig. 2. Diagram of bomb carrier (not to scale) showing underwing mounting plate (dotted line), and shackle with twin mounting points (A,B).

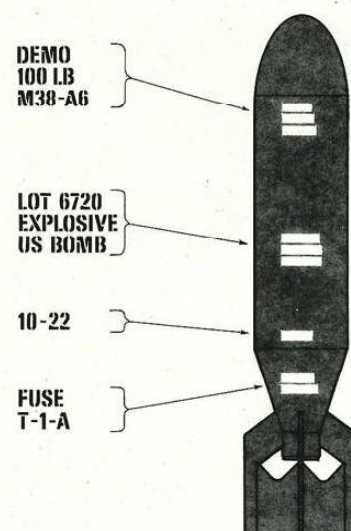


Fig. 3. Diagram showing yellow stencilling on olive drab bomb casing.



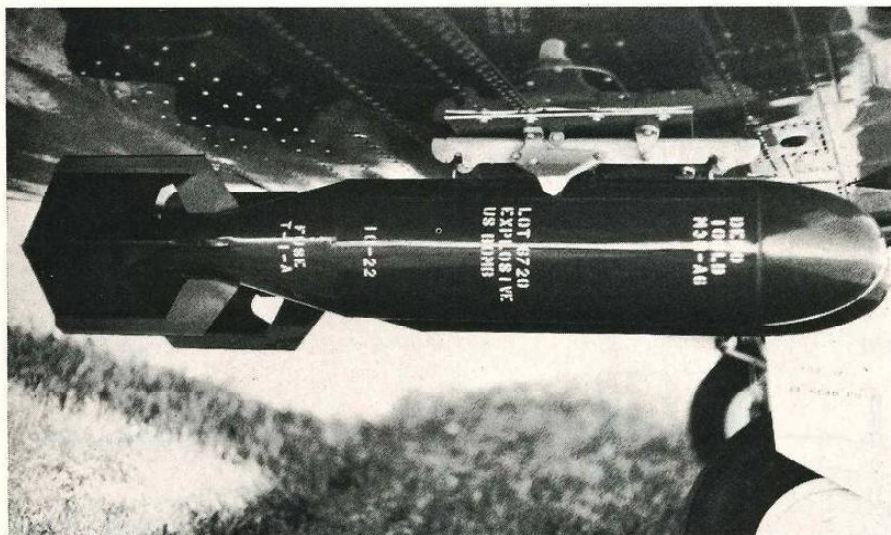




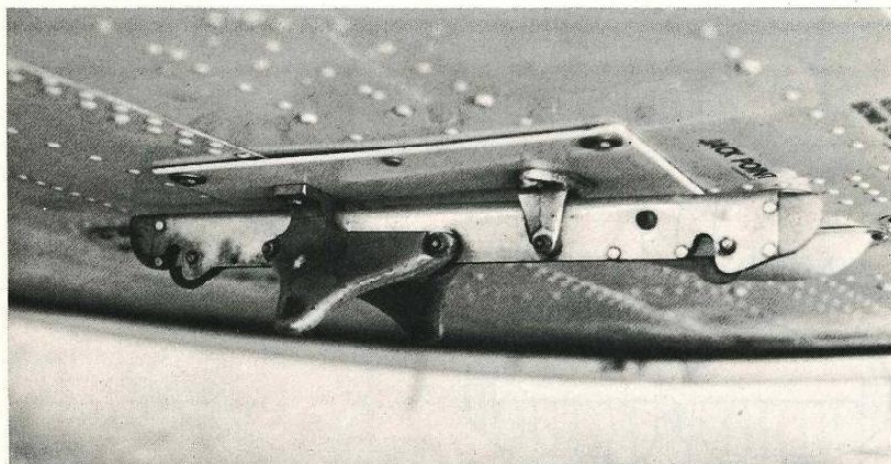
① NO PUSH	⑧* M38-A6 ARM NOSE FUSE-A-18-7	⑫ OIL DRAIN	⑰ HYDRAULIC TANK	⑳ DYNAMOTOR
② NO STEP	⑨* CAL .30 SERVICE AN-4 A-14-3 T.O. 153-2	⑬ FUSES	⑱ EXTERNAL POWER	㉑* CORRECTED T.O. D1-1-15
③ LIFT MOOR	⑩* GUN CAMERA W-7B AN-N6 USE NAC-LOAD K621-1 T.O. 65-3	⑭ STARTER ACCESS DOOR	⑲ BAGGAGE 100 LBS. MAX.	㉒ AC-3190 TOW-JACK AT GEAR POINT
④ JACK HERE	⑪ BATTERY	⑮* HAND HOLD	㉓* FIRE EXTINGUISHER	㉔ COL. RUSH
⑤ STEP		⑯ CRAIG FIELD USAF T-6G AC 49-3190 CREW WT. 400 LBS.		㉕ COL. SWENSON
⑥ 70 US GALS.				
⑦ USE GRADE 87-92 OCTANE FUEL				

Fig. 4 T-6G stencils

Not to scale



Two dummy 100-pound bombs are mounted on racks on each wing. All four bombs are painted olive drab and have yellow warning stenciling.



Close-up of a single bomb shackle. Note arms that straddle the bomb, steadying it in flight.

Wisconsin, the skies fill with formations of T-6s, SNJs, and Harvards from all over the U. S. and Canada. It's common to see 40 to 60 of these aircraft at one time, in the sky or in neat rows on the ground. All are owned and maintained by civilians, and all reflect the care and hard work put into them. For the modeler or enthusiast interested in color schemes and markings, there are dozens of types and styles to choose from, depicting the T-6 in many of its foreign and domestic color schemes.

The particular T-6 I've shown here is interesting in that it embodies a variety of details and markings that were used on this kind of aircraft over the years. The plane was remanufactured by North American Aviation at Downey, California. It was delivered to the Air Force on March 7, 1951, and its first assignment was to the 3545th Basic Pilot Training Wing, Air Training Command (ATC), Goodfellow AFB, Texas. In September 1951, it was transferred to the 3306th Training Squadron (ATC), Bainbridge AFB, Georgia. There it served until June 1955 when it was taken off active duty and sent to the 3040th Aircraft Storage Squadron (AMC), Davis-Monthan AFB, Arizona. After six months in the sun, 49-3190 was dropped from the U. S. A. F. inventory in January 1956.

Four years had gone by when, in April 1960, two gentlemen from Ohio bought 49-3190 and put it back into flying condition. Its FAA registration became N8399H, and this number is carried on both sides of the rear fuselage above the tail wheel.

After spending three years in Ohio, the T-6 was sold to a cloud seeding firm in North Dakota in April 1963. It was



modified by adding silver iodide generators and tanks. After receiving a new Pratt & Whitney R1340-AN1 engine in October 1969, the plane continued to earn its keep by changing the weather until November 1974. It was sold for the third time, and flew south to spend the next three years in Missouri. The new owner had all the weather modification equipment removed, and 49-3190 was restored to standard category, or "factory stock."

In February 1977, 49-3190 was sold again, this time to a former WWII pilot who had taken his training at Craig Field, Selma, Alabama, in 1942. He modified the plane's markings to reflect those used by his old training squadron. These markings consisted of the red cowling with white 190, an 8" diagonal red stripe around the rear fuselage, and the red fire extinguisher door on the left fuselage side. In addition, underwing bomb racks and replica .30-caliber machine guns were installed. (The stock T-6G didn't carry such armament, but had built-in capability to do so.)

In 1978, the plane was again sold, this time to its present owner, Gordon E. Swenson. He has left the markings and armament display just as they were when he bought the plane.

**T-6 details.** Student pilots at Craig Field received bombing and gunnery practice on ranges at Eglin AFB near Pensacola, Florida. While the AT-6 family of aircraft was capable of carrying a variety of underwing stores, this T-6G is fitted with four racks for 100-pound bombs. The locations for each rack are shown on the plan views, and details of the racks are shown in Figs. 1 and 2. Figure 3 details the stencil markings shown on each dummy bomb casing.

Two simulated .30-caliber machine guns are mounted, one in the upper cowling forward of the windshield and one in the right wing. A gun camera is in this location in the left wing, its lens barrel protruding slightly from the wing's leading edge.

All maintenance stenciling in Fig. 4 is located on the plans by arrows from circled numbers. Starred numbers indicate white, 1"-high letters; all other stenciling is in black, 1" letters.

The black USAF markings on the upper right and lower left wings are 32"-high block letters, 23" wide, with a 5" stroke and 3" separation. The tail serials are standard 8" numerals.

An interesting feature of this plane's markings is the treatment of the "star and bar" insignia. To simulate the 1942 Craig Field era when earlier AT-6s were used, Type 2 national insignias were painted on the aircraft. These have the white star with points extending to the edge of a 35"-diameter blue

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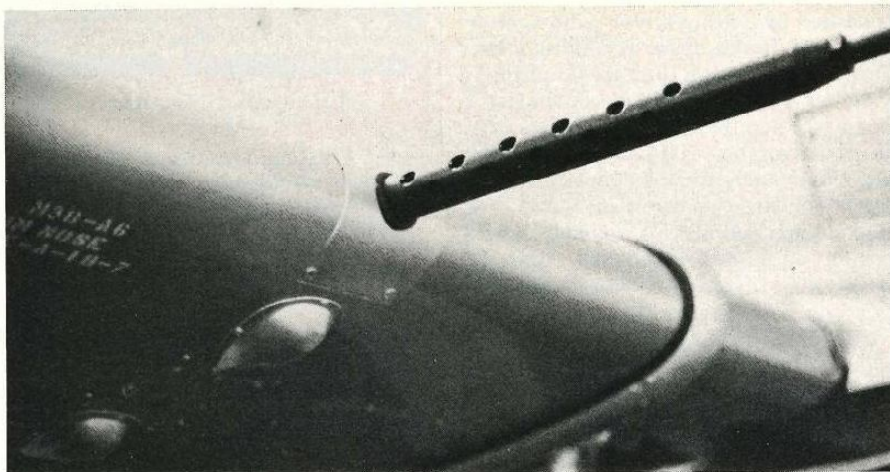
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Replica .30-caliber machine gun barrels protrude from the right wing (above) and the right side of the fuselage, just in front of the canopy.

circle. Then, to symbolize the 1950 era when the T-6G came into prominence, the red, white, and blue bars were added to each star. However, the blue surround was not added to the circle and the bars were positioned lower on the circle than standard. Both wing and fuselage national insignia are the same size.

**Texan finish.** The overall finish on this aircraft is silver dope. I cannot confirm that aircraft at Craig Field in 1942 wore this same overall paint color, but judging from photos of that period, AT-6s were probably overall natural metal. The use of silver dope on 49-3190 as it flies today is a protective measure; the color simulates natural metal while offering a weather barrier for the plane's metal skin. Seldom do I find a civilian-owned "warbird" in natural metal finish. Those that are require heavy, periodic waxing to protect the skin from the weather.

The black ADF "football" antenna and antenna mast on the upper rear fuselage are standard for the T-6G. But, since this is a civilian-owned plane, there are additional antennas for some of the modern avionics installed in the aircraft. Likewise, the red beacon light forward of the vertical fin is a modern addition that was not found on stock T-6Gs in the 1950s.

For the modeler planning to build a scale replica of this or another civilian-owned "warbird," I'd suggest carefully studying the aircraft you plan to reproduce. In most cases, you'll find the plane to be scrupulously clean! That "factory fresh" look is the rule rather than the exception. Often, the paints used to reproduce the various color schemes are gloss or semigloss rather than flat finishes. Although flat paints duplicate original color schemes beautifully, they weather badly and are costly to maintain.

The Texan, SNJ, and Harvard never

shared the spotlight with the "glamor" planes of WWII—the P-51, Corsair, and others—but the AT-6 was the workhorse that taught fighter pilots to fly the hot ones in combat, and for that it will be remembered. Likewise, in modeling, little interest has been shown in this venerable aircraft. Perhaps its basic function as a trainer made it a poor marketing item, even though it was used in combat in Korea and other foreign lands. When you consider all the variants of the T-6 and all the color schemes it has worn over the years, it suddenly becomes a prime subject for any scale aircraft collection. Maybe there's a little glamor in the old girl after all!

**FSM**

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The author wishes to express his gratitude to Douglas I. Pirus, Jeff Ethell, and Len Morgan for their assistance in preparing this article. And to Gordon E. Swenson and his fine T-6G, grateful thanks for the opportunity to show off a historic aircraft.



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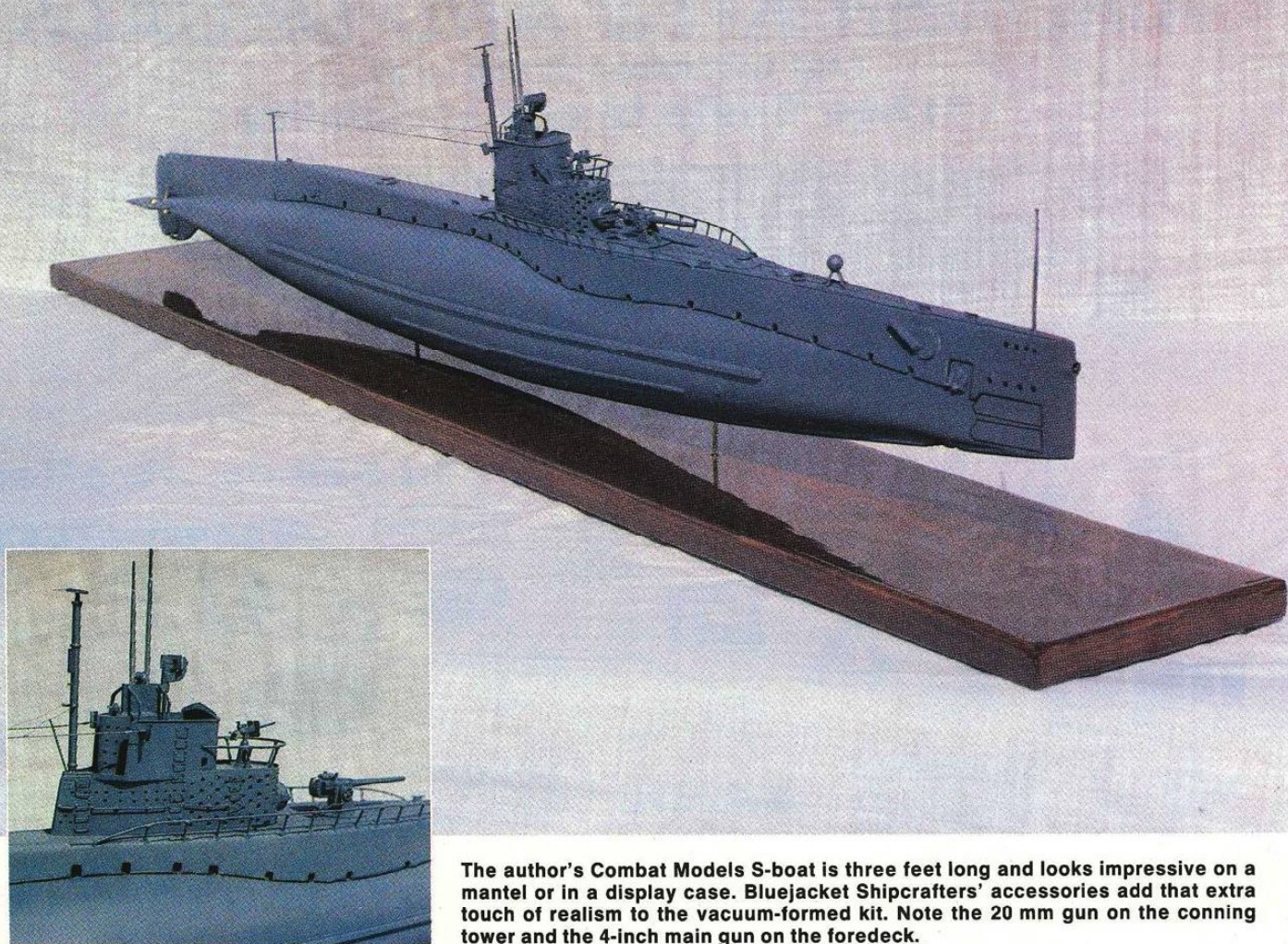
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The author's Combat Models S-boat is three feet long and looks impressive on a mantel or in a display case. Bluejacket Shipcrafters' accessories add that extra touch of realism to the vacuum-formed kit. Note the 20 mm gun on the conning tower and the 4-inch main gun on the foredeck.

## Modeling an S-boat in 1/72 scale

Correcting and detailing Combat Models' vacuum-formed submarine

BY GIFFORD HAMILTON

**S**UBMARINE SERVICE in the United States Navy during World War Two was dubbed the Silent Service because there was little if any publicity released about the exploits of U.S. submariners. Security was the main reason for this silence, but the lack of information issued to the press also concealed the poor record of our submarines early in the war. We started the war with many obsolete boats and torpedoes that did not function properly due to faulty exploders, inaccurate depth holding units, and spastic navigational devices.

Despite these problems the submariners still did more than their duty. The number of sunken enemy ships rose dramatically when the mechanical problems with boats and torpedoes

were solved. By the end of the war the U.S. submarine force had accounted for an astounding 5.4 million tons sunk in the Pacific. This works out to 54 percent of enemy tonnage sunk by only 1.6 percent of naval personnel on active duty during WWII.

A prewar design, the S-boat displaced 854 tons and had a 5,000-mile range. With only four forward-firing torpedo tubes and a 4" deck gun, the S-boats were obsolete but still saw action ranging out from bases in the Philippines, England, and the Aleutians. Of 51 S-boats at the beginning of the war, 22 saw action, and 4 were lost, but only 1 to enemy action. As of August 1942, the largest Japanese ship sunk was the cruiser *Kako*, sunk by S-44. By the end of the war the S-boats were relegated to training and other noncombatant duties. Some skippers said that

just to sail an S-boat was a challenge.

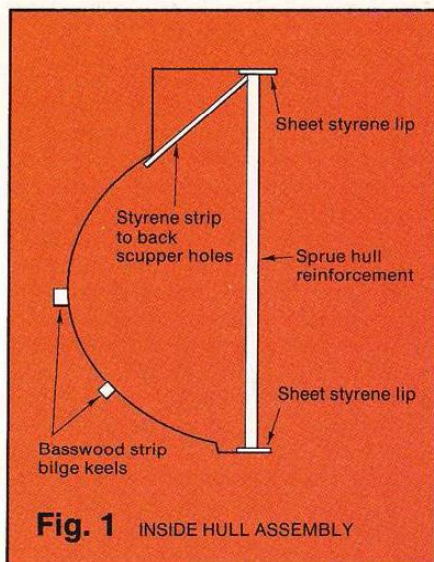
**Modeling the S-boat.** Even though I ended up being a Navy pilot, my original intent was to be a submariner, so I've always had a soft spot in my heart for subs. For this reason I was excited to hear of Combat Models'\* 1/72 scale S-boat kit. I had built several smaller sub kits but a kit in 1/72 scale really had me drooling.

My initial impression of the kit was disappointing. My model was shipped in a corrugated, single-thickness box with almost no packing to keep the parts from sliding or bouncing around. The box was partially crushed and one of the hull halves was marred by a large dent that occurred in transit.

The kit pieces were properly molded with no see-through thin spots on

\*Combat Models, 400 Third Street, West Easton, PA 18042.





**Fig. 1** INSIDE HULL ASSEMBLY

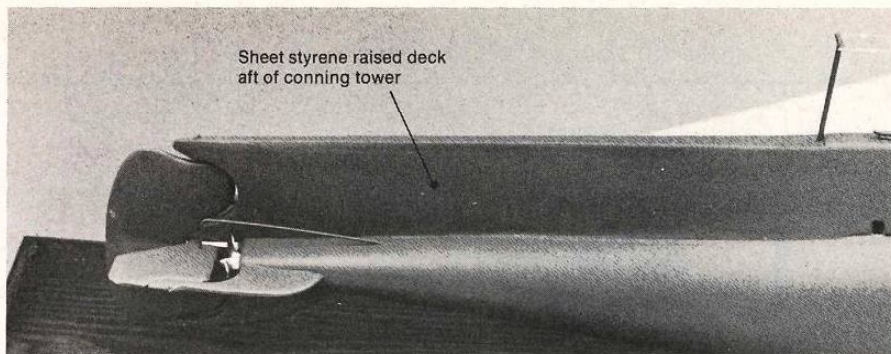
sharp corners and curves. The plans themselves are fairly well drawn but turned out to be inaccurate in several respects. The plans helped to locate detail parts and the two photos of real S-boat conning towers provided correct information, but I wish there were more detail photos of the bow and stern. The instructions were poor; they are intended to be used with all Combat Models submarine kits. If you're an experienced scratchbuilder who has built lots of vacuum-formed kits, you shouldn't have a lot of difficulty with this kit. However, it does require a great deal of patience.

Because all S-boats were extensively modified during their careers, there were probably no two alike. In conjunction with the kit plans, I used the S-48 blueprints available from Bluejacket Shipcrafters\* for general information, as well as the recommended Bluejacket fittings listed on the back of Combat's plans. The fittings are molded in 1/96 scale but don't look too out of scale on the finished model.

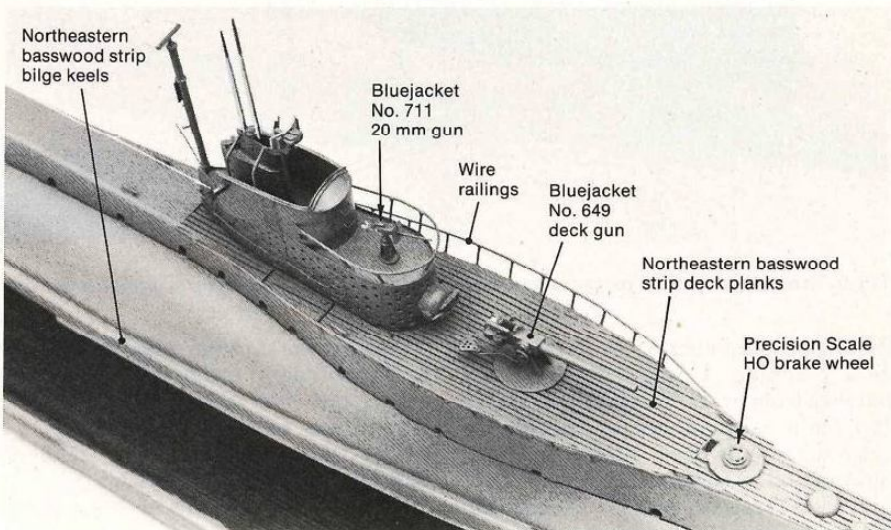
**The hull.** After removing all the parts from the sheets, I decided it would be better to scratchbuild the conning tower; the kit parts were not accurately shaped and didn't match—a problem that came up frequently with this kit. The hull was molded in four sections, left and right bow and stern parts. I started construction with the bow sections. Curiously, the left and right bow halves didn't match in length. However, the stern halves didn't match either, but when I put the bow and stern assemblies together, the long bow half made up for the short stern half and vice versa.

Before joining any of the hull sections, I added plenty of vertical and horizontal reinforcement inside—due

\*Bluejacket Shipcrafters, 93 Canal Street, Shelton, CT 06484.



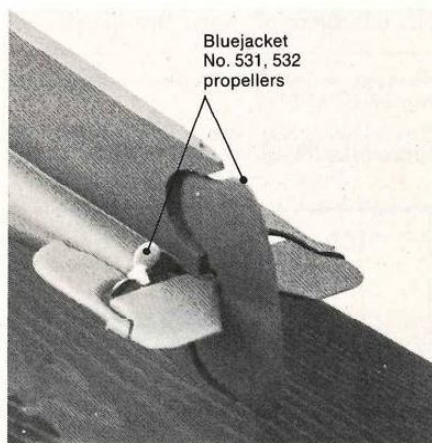
**Fig. 2.** Gifford added the raised deck aft of the conning tower.



**Fig. 3.** Additions to the hull and deck provide details not included in the kit.

to its length, this kit would be too flexible without such reinforcement. I added extra reinforcement at the joint of the two major hull sections since there was a lot of filling and sanding to be done. In cases like this you may be tempted to lay on large quantities of filler. Don't! Some fillers attack plastic if applied too thick; just apply thin layers. I used cyanoacrylate (super glue) to eliminate a lot of grief during construction.

The hull sections tended to curl, so I added vertical supports at the keel and deck center area as shown in Fig. 1. First, I backed the scupper holes as indicated with strips of sheet styrene. Then, I attached strips of plastic underneath the deck and inside the keel. These strips not only add strength, but provide a lip onto which I attached the other hull half. Next, I added sprue vertical supports along the hull to keep the deck and keel areas from turning in on themselves. Although I had been careful not to sand the edges of the hull pieces too much, I still ended up with a twisted bow section. This was corrected with filler and a sheet of plastic. Before adding details, I made sure that all filling and sanding on the hull was completed.



**Fig. 4.** Bluejacket propellers, both right- and left-handed, were added to the shafts.

I opted for the later, raised aft section that runs back to the top of the rudder, Fig. 2. Building this was pretty straightforward using the kit parts and sheet plastic. One positive point about this kit was all the usable extra plastic.

**Hull details.** The deck aft of the conning tower was finished with sheet plastic laid over the hull. I laid out the locations of the hatches and installed



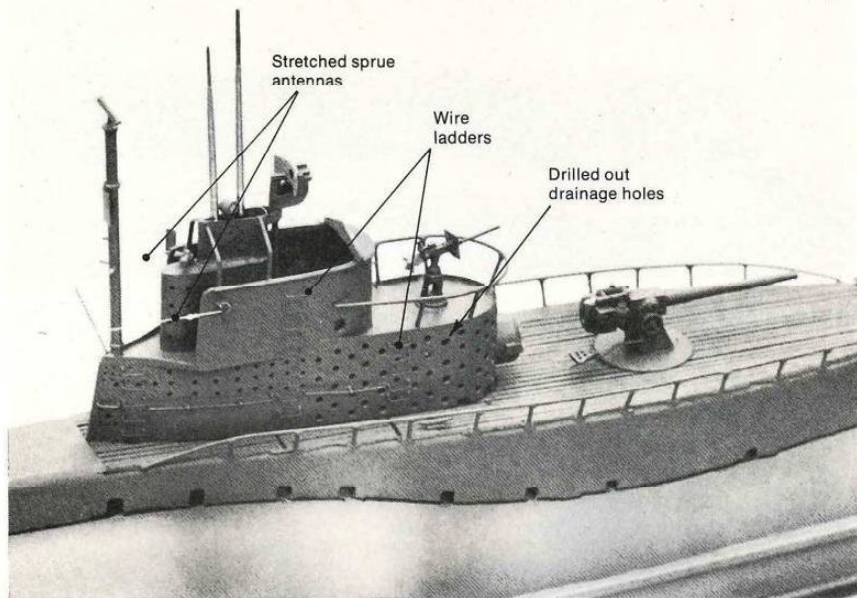


Fig. 5. The author made a replacement conning tower from sheet styrene, sprue, and wire.

them before moving on to the forward deck planking. I scratchbuilt all the hatches from extra kit plastic and used HO scale railroad brake wheels\* for the hatch handwheels. I left the area to be occupied by the conning tower blank and used basswood strips\*\* to simulate the planking from that point forward to the bow, Fig. 3.

For a break, I constructed the aft diving planes, props, and rudder, Fig. 4, but left them off until the major construction was through.

\*Precision Scale Co., Inc., 1120 A Gum Avenue, Woodland, CA 95695.

\*\*Northeastern Scale Models Inc., P. O. Box 425, Methuen, MA 01844.

Next, I gave the hull a couple of coats of primer to be sure I had everything properly filled. After I was satisfied with the finish, I added the anchor, railings, fenders, and basswood strip bilge keels.

The railings weren't as hard to install as they looked. I formed wire main horizontal rails over the plans and attached them to pre-drilled holes with epoxy. After the epoxy had cured, I pushed small sections of wire into pre-drilled holes for the posts and anchored them with super glue.

The Bluejacket deck gun (No. 649) was detailed with various parts from the scrap box including a seat on the

starboard side. The base of the gun is a piece of plastic.

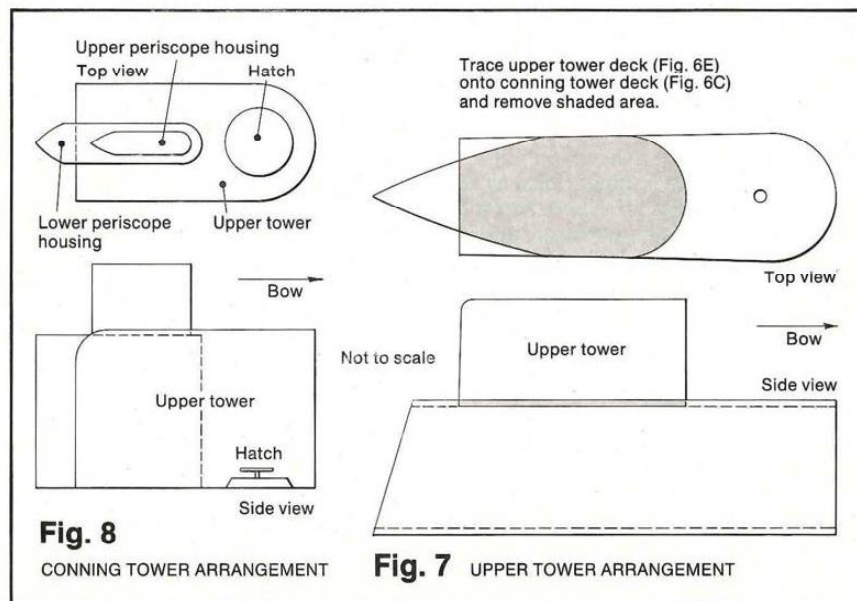
**Conning tower.** The conning tower on my model is completely scratch-built, Fig. 5, a project that turned out to be fairly easy since all curves were flat rolled. Figure 6 shows actual size templates for the conning tower sides, top, base, and decks. The vertical walls of the tower were made from one piece of plastic wrapped around the base and deck pieces. The trailing edge of the lower section of the tower slopes forward, not vertically as shown in the kit plans. This makes the tower base slightly longer than the deck above it. The drawing shows the correct angle for the trailing edge as well as the height; the actual length of this piece depends on how the base and deck are cut.

The upper tower deck was flush with the deck of the lower section. To simulate this, I removed the redundant part of the lower tower top deck, Fig. 7. The lower periscope housing, Fig. 8, was made by laminating four pieces of plastic and sanding to shape. I made the upper periscope housing by rolling a sheet of plastic around some dowels. I worked directly from the photos for the rest of the tower details.

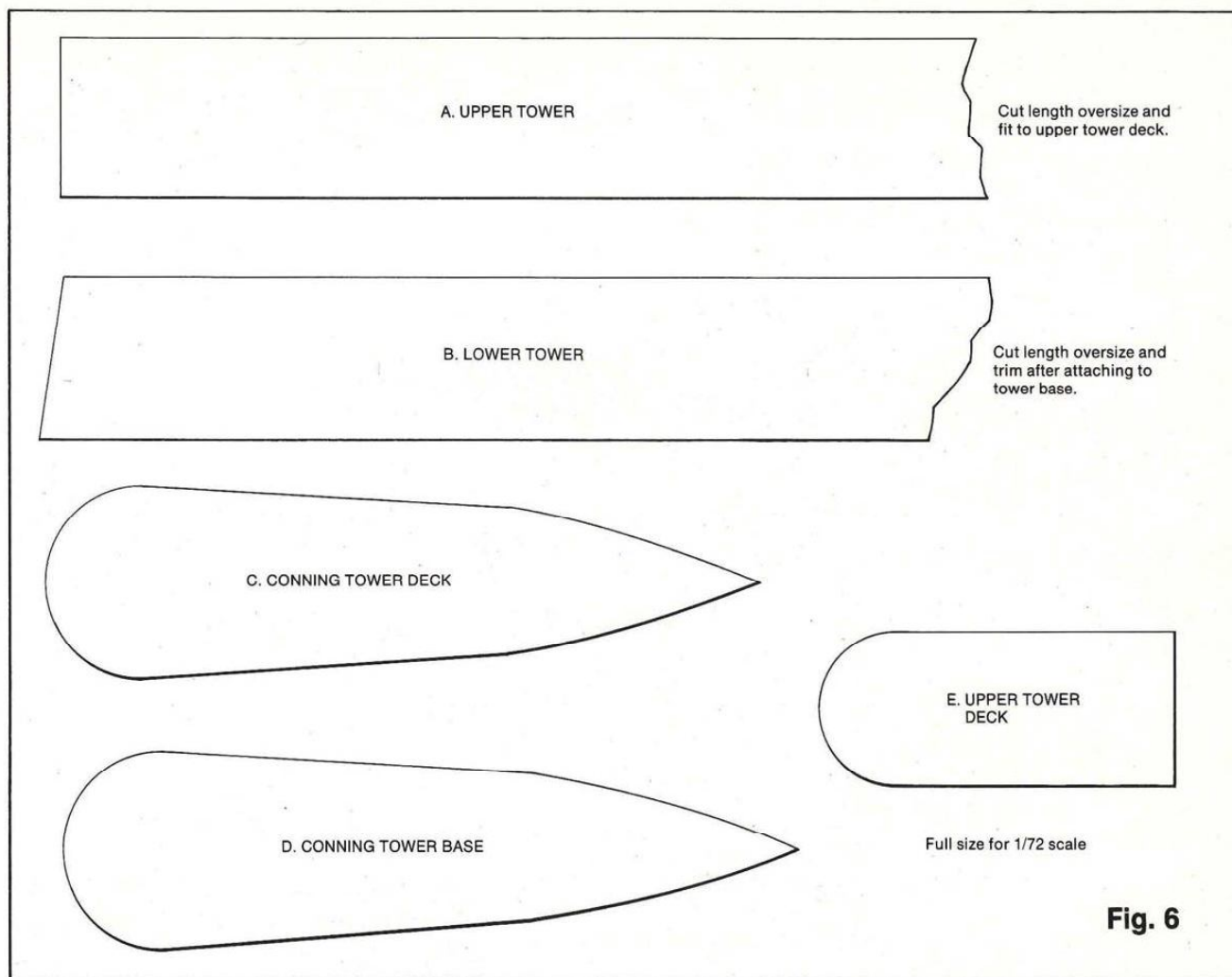
My next step was to drill out all the drainage holes. Although it looks like a tough job it only took about 15 minutes. These holes were made after the boats were commissioned to facilitate flooding of empty spaces and decrease diving time. Since the tower was the most detailed area of the boat, I took my time. I installed sprue and wire ladders and grab rails, using the photos included in the kit as a reference.

**The finishing touches.** After completing the major construction, I added screws, rudder, aft diving planes, and all other fragile details. Many different color schemes were used on submarines, but I decided on a single color paint scheme similar to measure 9 shown in *U. S. Subs In Action*. I used several coats of primer, sanding between coats, followed by three coats of Testor Model Master FS 36118 Gunship Gray. The hull and conning tower were painted separately and then joined after the paint was dry. I chose not to weather my model, leaving it as it would look just after a refit. I painted the extended periscopes with Testor silver to give them the shiny finish required. The last things I added were stretched sprue antennas.

I made the base from a piece of stained pine covered with decoupage epoxy available at craft stores. The supports are two brass-painted coat hanger sections that extend all the way up to the deck. As a finishing touch I added a plastic case to keep dust and the cat off the completed model. **FSM**







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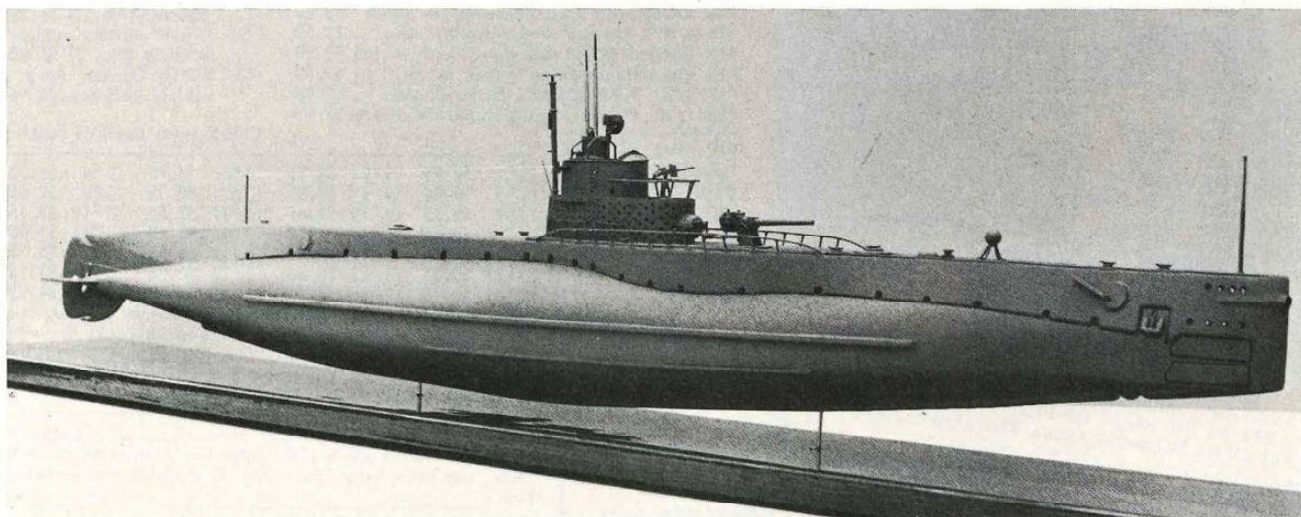
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Gifford suspended his model on two pieces of coat hanger wire mounted on a decoupaged wood base.



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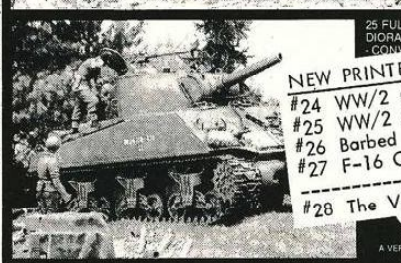


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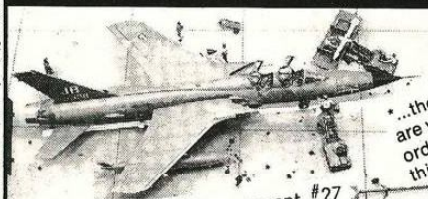
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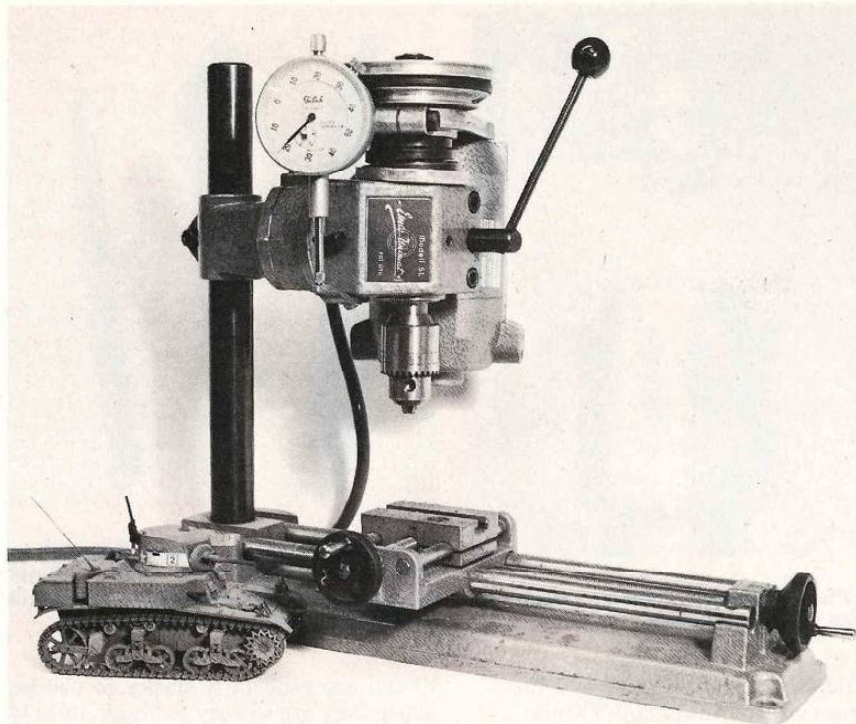
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The author's Unimat SL set up as a drill press. Paul added the dial indicator so he can measure the depth of cuts while milling. The tank is 1/35 scale.

# Modeling with a drill press

Tips and techniques for drilling holes and embossing rivets

BY PAUL BUDZIK

**A**S YOU HONE your modeling skills and improve your results from project to project, precision becomes more and more important. While some modelers achieve truly impressive results with nothing more than a modeling knife and tweezers, others—including me—enjoy using machines. This article is a brief introduction to the drill press, including techniques for using a drill press for several common modeling tasks.

If you are thinking about buying a drill press for use in modeling I strongly suggest a small machine such as the Unimat. Although you can use a full-size drill press for modeling, the miniature machine is more convenient in many ways, and a wide range of accessories is available.

If you already have a drill press, it probably came with an operating manual. The manual provides specifics on your machine, and you should become familiar with them, but the basic manual seldom includes information appli-

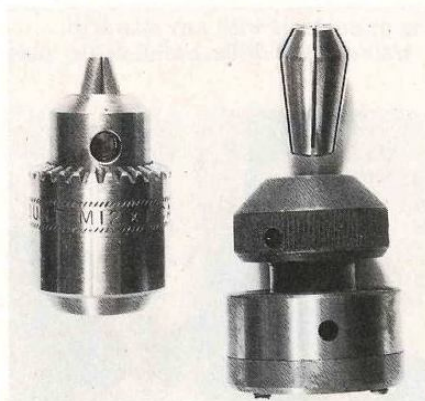


Fig. 1. A drill chuck (left) and a collet chuck. The disadvantage of the collet chuck is that it requires a different collet (the piece shown above the chuck) for each drill size or tool shank.

cable to small-scale modeling. Even if you have a machine designed for small work, such as a Unimat, you quickly find that the manufacturers' ideas of "small" are different from our ideas.

**About chucks and collets.** The pri-

mary function of any drill press is to drill holes, and the usual way to hold the drill is a chuck, Fig. 1. The most common type is a drill chuck, which can accommodate a wide range of drill sizes. This is the type of chuck you'll use for more than 90 percent of your drill press work.

A second type is the collet chuck, which requires a set of interchangeable collets to accommodate various sizes of drills and cutting tools. Although the collet chuck offers a small advantage in accuracy over the drill chuck, it is more expensive because it requires a different collet for every drill size. The collet chuck grips very tightly, and with small drills this is more likely to cause breakage. I use my collet chuck infrequently, mostly for milling operations or when a drilling operation requires the ultimate in precision. All in all, it's a luxury, not a necessity.

Chucks can be attached to the drill press spindle in different ways. One method incorporates a tapered shaft on the chuck that mates with a tapered socket on the drill press, Fig. 2. Such a mounting is fine for drilling operations, but when the chuck is subjected to lateral forces (for example, when milling or sanding), the socket can loosen. Chucks can also be threaded onto their spindles, Fig. 3, and this type of mounting is more secure for milling and sanding operations.

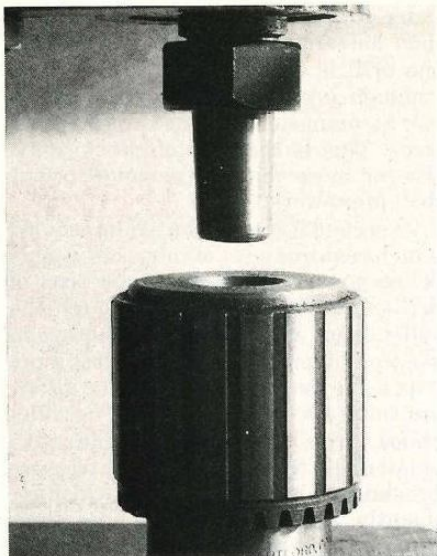
**Choosing drills.** Absolutely essential for modeling is a set of twist drills in numbered sizes 1-80. Drills are manufactured from, in order of hardness, carbon steel, high-speed steel, and carbide steel. While carbon steel drills are easy to sharpen and relatively inexpensive, they dull quickly. Unless nothing else is available, avoid buying carbon steel drills. Carbide drills are good, but they are expensive—and brittle, so they break easily.

High-speed steel twist drills are the best choice for modeling. Although they are more expensive than carbon steel drills they stay sharp longer, and they are less likely to break than carbide drills.

In addition to a set of twist drills you'll need a couple of center drills, Fig. 4. These are used to locate holes on the model before drilling with a twist drill, much like a center punch is used in metalworking. The center drill creates a small, precise depression at the drilling site which keeps the twist drill from wandering, Figs. 5 and 6. You don't need a center drill for locating holes for single details such as grab irons or handles, but if you have to drill a row of accurately spaced holes using the graduated dials on the Unimat milling table, you'll probably want to use a center drill.

Small center drills suitable for mod-





**Figs. 2 and 3.** (Left) a drill chuck with a socket that fits on a tapered shaft, and (right) another chuck that screws onto a threaded arbor. Both types are common.

eling are available, and a small countersink can be used as a center drill, but for the smallest drill sizes I use a Dremel cutter called a "flame burr" (Fig. 4). I've also used homemade center drills made by grinding flats on the end of a shank of a broken burr or drill.

**Drilling speeds and lubrication.** The correct speed for drilling depends on the material being drilled and the size of the drill bit. The formula for figuring the correct speed is:

$$\text{rpm} = \frac{4 \times \text{sfm}}{\text{drill diameter}}$$

where sfm is the desired surface speed (a machining term) of the material. Average surface speeds for some common materials are:

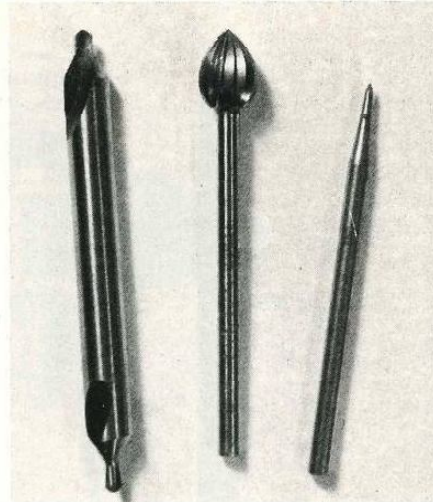
Stainless steel and plastic 20-40 sfm

Mild steel or cast iron 80-100 sfm  
Brass or aluminum 200-300 sfm  
Wood 300-400 sfm

What all this boils down to is that you'll need to slow the drill press way down for drilling plastic. Given the small drill diameters used for most modelwork the cutting speed of the drill is far less critical than the heat buildup at the drill tip.

Lubrication is important, particularly when drilling metal, Fig. 6. Because the oil functions not only as a lubricant but also aids in cooling and chip clearance, use a lightweight oil. Lubrication becomes a necessity when using the miniature drills (sizes 75-80), and it is highly recommended for drilling most steels with any size drill.

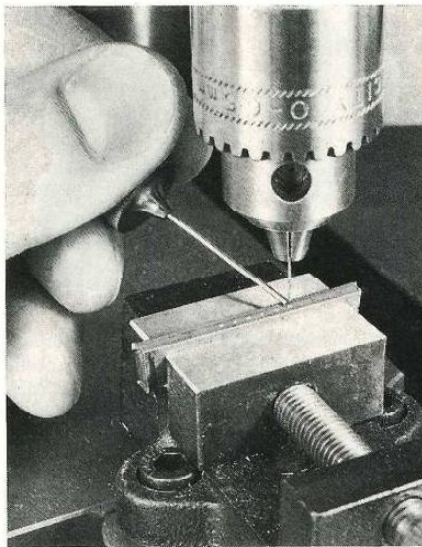
**Using small drills.** Small drills, sizes



**Fig. 4.** Bits for center drilling. From left to right: a commercial center drill, a Dremel flame burr, and a homemade center drill ground from a broken burr.

61-80, are especially tricky to use because they are so easy to break, but I've developed a few simple techniques to make them last longer. First, when drilling with the small sizes I rarely use the chuck key to tighten the chuck; instead, I use finger pressure alone. Using the key means the chuck will grip the drill tightly — and if the drill grabs, chances are good you'll need a new drill. Hand tightening is adequate and much safer.

Second, it's important to develop a sensitive feel — never feed a small drill with force. Instead, let the drill do the cutting, and take it slowly. My normal procedure for drilling a small hole goes like this: Locate the hole with a center drill, then remove the center drill and replace it with the twist drill

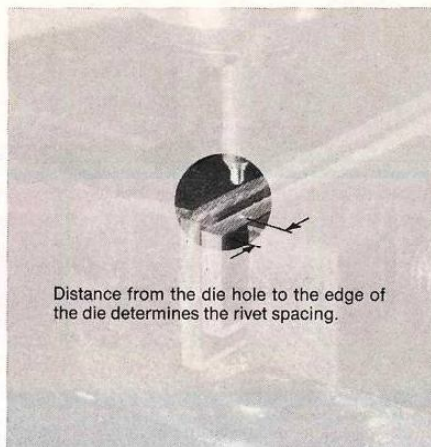
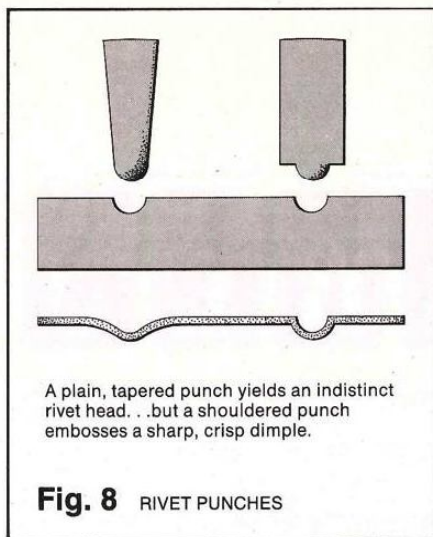


**Figs. 5 and 6.** (Left) Paul spot drills, or locates, a row of evenly spaced holes by mounting the work on a milling table and advancing it with the handwheel. Next he replaces the center drill with a twist drill (right), adds a drop of oil, and completes the holes.



**Fig. 7.** A three-jaw lathe chuck in use as a work holder on the drill press table. This is far more precise than hand-holding the work — and safer, too.





**Figs. 9 and 10.** (Left) A punch-and-die setup for embossing rivets. Here the punch is brass, the die acrylic plastic. (Right) Adding rivet detail to a brass panel. Care is required to ensure that the corner rivets wind up in the corners.

(a good reason for using a center drill about the same length as the final drill). Place one drop of oil in the depression left by the center drill, then begin drilling by carefully lowering the drill. Watch to make sure the drill finds its way into the depression, then let the drill down a few thousandths of an inch and quickly withdraw the drill. Repeat the process, feeding the drill into the material in .005" to .010" increments.

Withdraw the drill between cutting cycles to clear chips from the hole. Add oil if necessary to maintain good chip removal — you don't want oil all over the place, but there should be enough to help float the chips out and keep the cutting tip of the drill free. The deeper you go the more cautious you should be, because the chances of the drill binding become greater. If you are going to drill a deep hole I recommend using a new drill as it will be sharper and will clear chips better.

Avoid hand-holding your work while drilling, because doing so leads to inaccuracies and broken drills. Whenever possible clamp the part to be drilled to the drill press table or hold it in some sort of vise; a drill press vise is a must, and three- and four-jaw lathe chucks also work nicely for holding the work, Fig. 7.

**Tips for drilling plastic.** Drilling plastic presents special problems, most of them related to heat buildup at the cutting tip of the drill. First, as mentioned above, run the drill at a low speed and withdraw it frequently to clear chips and allow it to cool. Try to keep the amount of time the drill is in the material to a minimum, because feeding the drill slowly can make the plastic heat up and melt around the drill instead of cutting cleanly.

When drilling several holes the same size be sure to allow the drill to cool between holes (if you are in a hurry,

switch drills!). When drilling deep holes I generally start with a drill a few sizes smaller than the final size, then finish up with the correct size. This procedure removes less material with each cut, which minimizes heat buildup and improves chip clearance.

**The drill press as a rivet maker.** Another use of the drill press is as a rivet embossing tool. The only accessory required is a punch, which you can file from a piece of brass rod chucked in the drill chuck, Fig. 8. (A brass punch is adequate for embossing soft materials such as plastic, aluminum, and brass, but if you plan to emboss steel or want a long-lasting punch, make it from drill rod.)

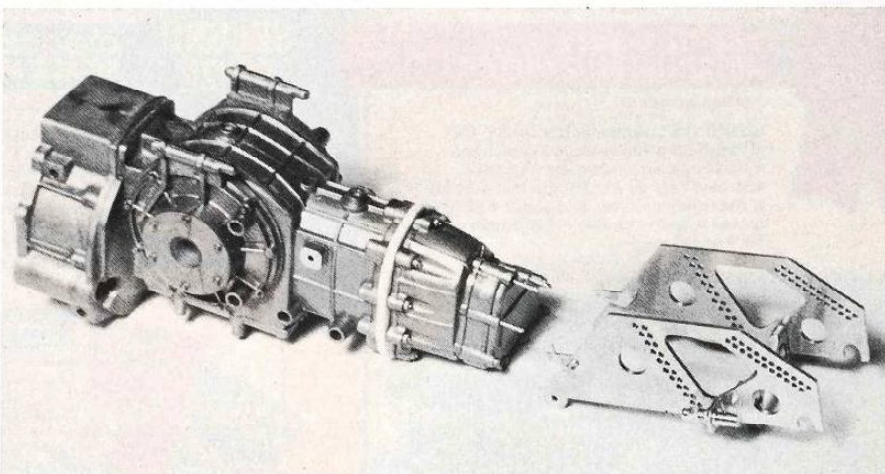
To make crisp rivets the punch should force the material into a matching hole in a die placed underneath the material. Make the die from acrylic, brass, or steel, depending upon the material you plan to emboss, Fig. 9. With a little ingenuity you can set up stops and

guides so your rivet lines will be straight with rivets uniformly spaced.

I usually make the distance between the edge of the die and the hole equal to the desired spacing between rivets. To do this I measure and mark the distance from the edge of the die material to the hole, then clamp the material on the drill press and spot and drill a hole at the marked location. I replace the drill with the rivet punch and I'm ready to go. You simply punch the first rivet, shift the material so the first rivet drops just past the edge of the die, then punch another rivet and repeat the process. The result is an entire row of perfectly spaced rivets, Fig. 10.

Just as it takes practice to become proficient with tweezers, you won't feel comfortable with your drill press the first time you use it, but given time, the techniques become almost second nature. Once they do, you'll wonder how you ever managed to model without this helpful machine.

**FSM**



Paul's favorite modeling subjects are large-scale racing cars and motorcycles, and he scratchbuilds many of the components. Drilling the numerous holes in this metal mounting bracket for the rear wing of a 1/12 scale McLaren M-23 was a job made for a drill press. The modified plastic part to the left of the bracket is the transaxle.



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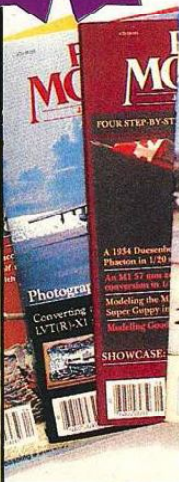
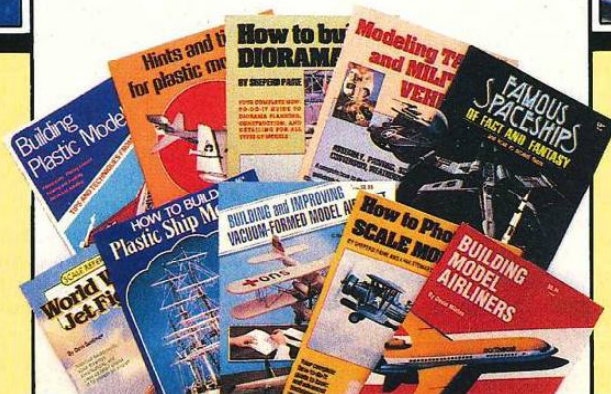
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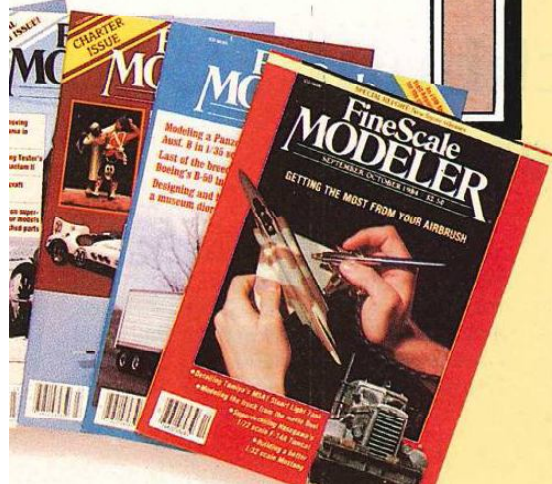
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# DORA

Two 800 mm guns, the largest ever built, were produced by Krupp to smash the French Maginot Line defenses, but by the time the first was delivered in 1941 the Battle of France was over. The guns (the first was named Gustav, the second was Dora) subsequently saw action on the Eastern Front, including the siege of Sevastopol. Dora could fire a 2,200-pound high-explosive shell more than 28 miles.



## FSM SHOWCASE

### Lewis Pruneau's scratchbuilt 1/35 scale German railway gun

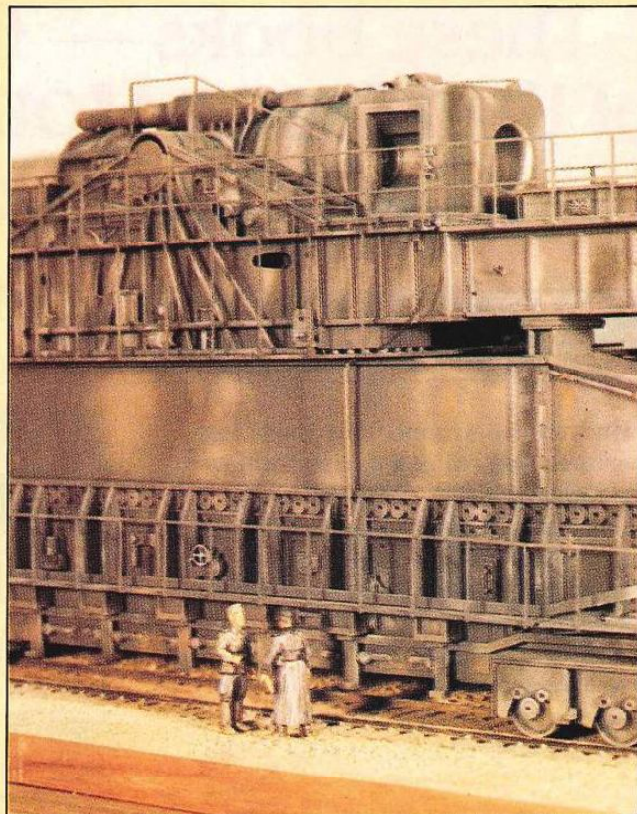
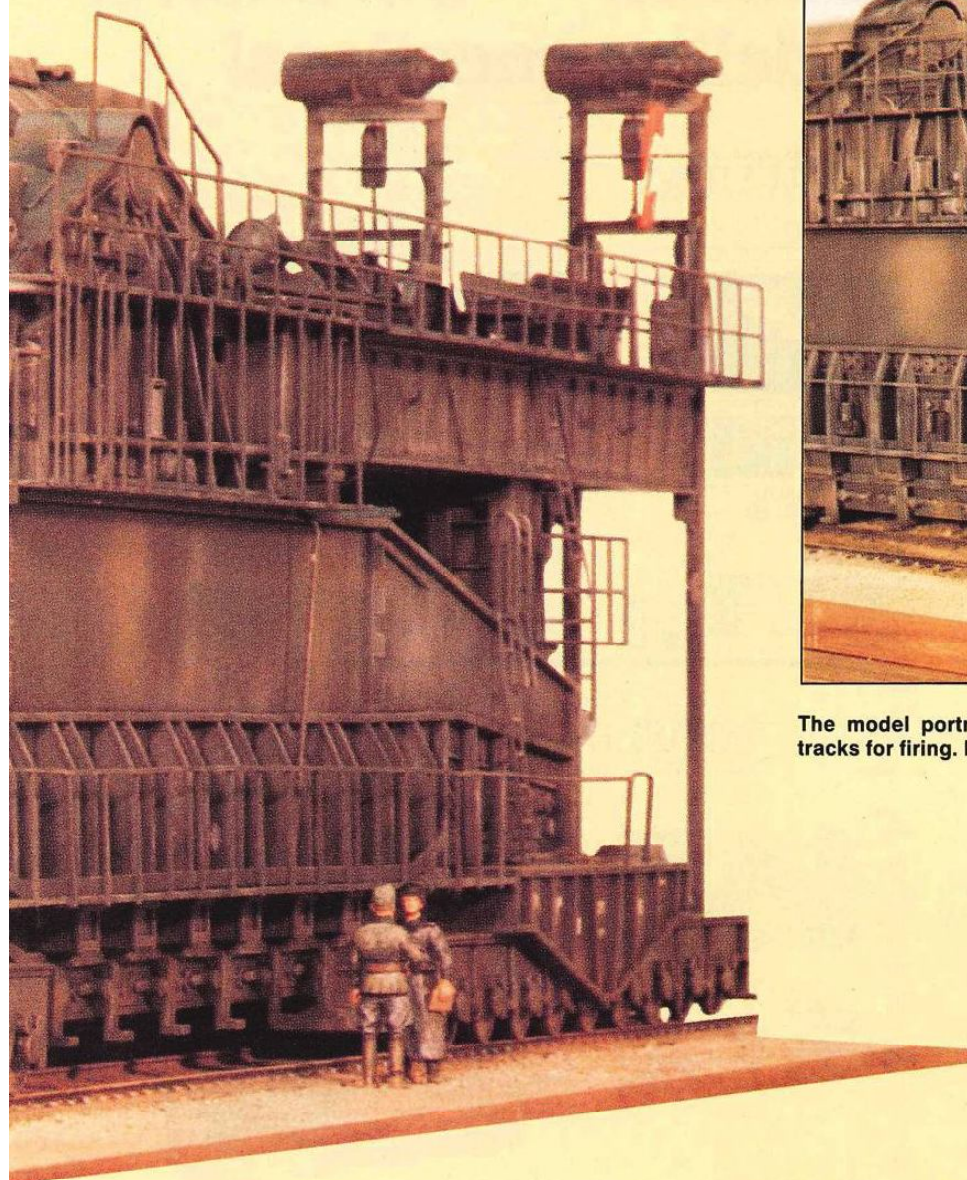
**T**HIS 44"-LONG model of the German 800 mm railway gun Dora took Lewis Pruneau about eight months to scratchbuild. Lewis, of Sainte Genevieve, Missouri, explained that he decided to build the 1/35 scale model be-

cause it's unusual and there is no kit of Dora in production.

The model received the judges' best award in the diorama category and the first prize for armor dioramas at the July 1984 International Plastic Model-

ers Society/U. S. A. national convention in Atlanta, Georgia. Lewis also was awarded first place, people's choice, and judges' grand award at the 1983 Greater St. Louis Model, Toy and Doll Exposition for the model.





All photos, Mark R. Hughes

The model portrays Dora set up on specially built parallel tracks for firing. For movement the gun was disassembled.



Dora and her builder. Not shown in this photo is the huge crane used to assemble the gun, which Lewis has also modeled.

For references, Lewis used two books: *German Railroad Guns in Action*, published by Squadron/Signal Publications\*, and *Dora*, published by Motorbuch Verlag\*\*. "Dora has the most complete set of reference pictures that I know of," Lewis says, but it is in German. He also drew his own plans of the railway gun before he began building the model.

Lewis told FSM that "the construction of the model meant scavenging for items that model shops don't carry,

such as PVC pipe for the barrel. Other items used include sheet styrene, Plastruct ABS structural shapes, Evergreen strips, and parts from numerous kits and toys. The total price of the materials was a whopping \$356.00.

"Constructing the model entirely of plastic necessitated manufacturing several jigs." For instance, one jig was used to hold the superstructure while painting, and another was made for cutting hand rail supports. "Construction of large flat areas was made possible by using a 4' x 8' sheet of glass," Lewis said. "By using the glass I was assured that all work would be straight.

"Each component was sprayed with Pactra International Panzer Gray and

set aside for three days' curing time, then a wash was applied, consisting of 90 percent turpentine and 10 percent Pactra flat black. The parts were then set aside to dry.

"Dry-brushing with Winsor & Newton oil paints in various shades of gray and brown gave Dora her weathered look. Testor silver and flat black were used to simulate bare metal. The decals were mostly scale railroad car decals set with Micro decal set.

"For me," Lewis reports, "the most outstanding feature of the model is the detailed superstructure and the size of the barrel." Our guess is that most FSM readers will be amazed by Dora's sheer size.

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\*Squadron/Signal Publications, 1115 Crowley Drive, Carrollton, TX 75011-5010.

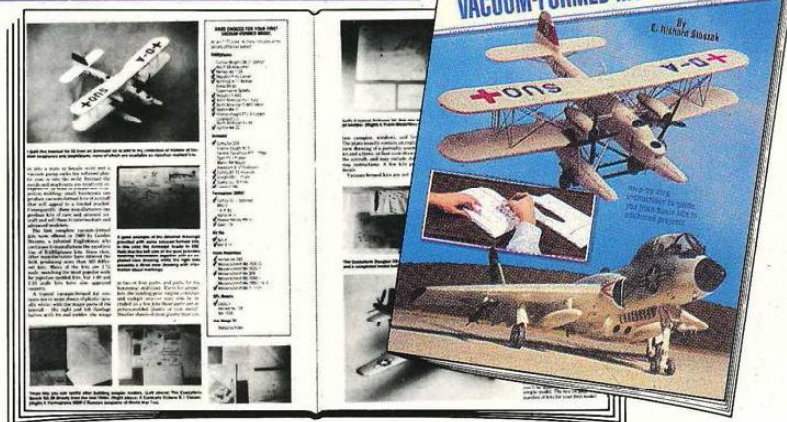
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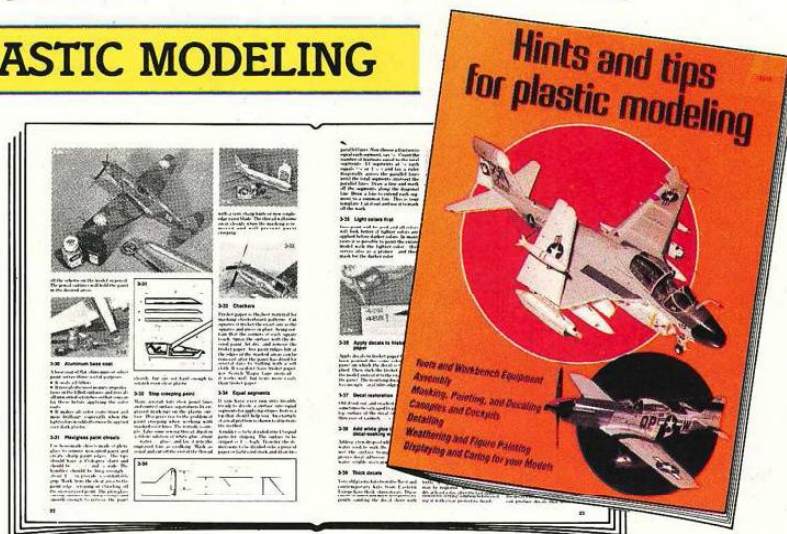
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## KENTUCKY MOUNTED VOLUNTEER, WAR OF 1812

BY R. J. STAFFORD  
ARTWORK BY THE AUTHOR

PERHAPS IN NO OTHER place but America could mounted riflemen have evolved as an effective fighting force. The horse was an essential of frontier life in the Trans-Appalachian West, and in time of hostility it provided the mobility necessary to overtake an Indian war party or to retaliate deep into Indian territory. Armed with his long rifle and lightly equipped, the Kentucky marksman was an efficient fighter if properly led. Several men, including border captains such as Isaac Shelby, James Robertson, and Simon Kenton, employed bands of riflemen with success against the Indians in the Northwest.

Soon after the declaration of war in June 1812, Colonel Richard M. Johnson raised a regiment of mounted volunteers. This regiment was active in the Northwest against the British and their Indian allies under Tecumseh throughout the rest of that year and 1813. On July 31, 1813, Kentucky Governor Isaac Shelby called for a large volunteer force of mounted riflemen for a late-summer campaign against Upper Canada. Shelby knew of the Kentuckians' distaste for foot service — the backwoodsmen wanted to ride, not march, to battle.

Among the best-trained volunteer troops of the war, only Johnson's mounted riflemen were allowed to take their horses onto the Ontario Peninsula in General William Henry Harrison's pursuit of a British and Indian force under Brigadier General Henry Proctor. Firing their long rifles from the saddle at the Battle of the Thames on October 5, 1813, Johnson's regiment charged and broke the British line. Tecumseh was slain, and for the Kentuckians the victory avenged earlier humiliations. For the United States it was the first significant land victory of the war.

According to John K. Mahon, Johnson's mounted volunteers "carried the long rifle on horseback with as much ease as other persons might carry a

hand gun." However, most of the Kentucky riflemen fought on foot and were as undisciplined and individualistic as their Shawnee enemy. Buckskin hunting shirts, moccasins, leggings, and trousers were typical dress. Weapons included the rifle, powder, powder horn, shot bag, skinning knife, and the ever-present tomahawk. The volunteer depicted wears the popular pound hat, which was sometimes topped with a plume. Since each volunteer equipped

himself, the colors were not uniform and the clothing had a decidedly civilian look.

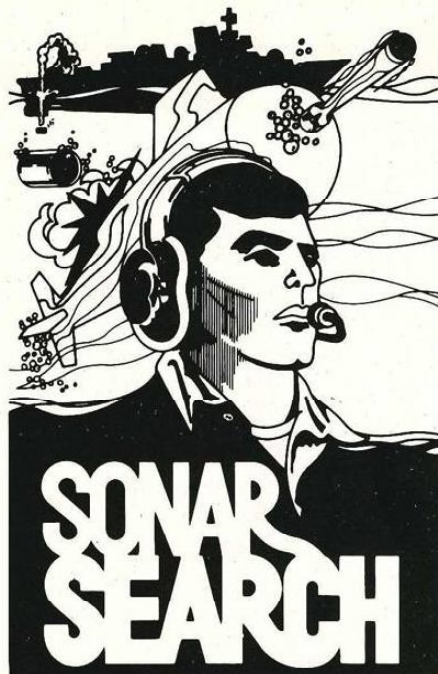
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- Mahon, John K., *The War of 1812*, University of Florida Press, Gainesville, 1972.







... Sonar reports the "whine" of torpedoes running toward you. You kick the destroyer's rudder full-right and order flank speed.

As you watch, two torpedoes cross your bow. Sonar returns quickly and you close on the submarine below. Suddenly, bearing to target shifts 180 degrees and the sonar return is instantaneous. THE SUB IS DIRECTLY BELOW! You stab the fire button and watch as 6 depth charges arch into your wake. Several long seconds pass before they explode, sending six domes of white water to the surface. The message "SUBMARINE SUNK" flashes on the screen. But congratulations are brief. Four more subs are lurking out there somewhere, trying to escape into the open ocean...

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BY BURR ANGLE

### How to Photograph SCALE MODELS

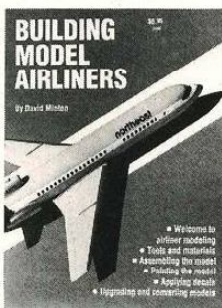


#### How to Photograph Scale Models

Well-known modeler Sheperd Paine and Sports Illustrated photographer Lane Stewart are coauthors of this new Kalmbach how-to book. The 8 1/4" x 11 1/4", 64-page, soft-cover volume contains 156 photos (44 in color). Many of the photos show camera equipment and setups for photographing models. Others are "proof of the pudding" pictures by Paine, Stewart, and others of models, including figures, armored vehicles, aircraft (both operating and display), dioramas, and railroad layouts. The text first describes techniques for beginners, then progresses to advanced topics such as how to photograph models in action.

Throughout, the authors stress that imagination and planning are far more important than fancy gadgetry.

The book is published by Kalmbach Publishing Co., 1027 North Seventh Street, Milwaukee, WI 53233; the price is \$8.95 plus \$1.00 postage if ordered directly from the publisher.



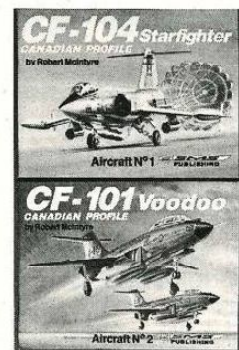
#### Building Model Airliners

Also new from Kalmbach Publishing Co. is David Minton's 48-page, 8 1/4" x 11 1/4", soft-cover book (with 107 photos and 10 drawings) on building model airliners from injection-molded plastic kits. The author has written for the beginner to both plastic and airliner modeling, so the book should be useful even to those who have never built a model of any kind. Minton describes how to assemble, paint, and decal airliner models and provides information about sources of specialized airliner modeling materials in-

cluding decal sets. There is a bibliography. The price is \$6.95 plus \$1.00 postage if ordered directly from the publisher.

#### Canadian Profiles

Sabre Model Supplies, Ltd., 89 Montreal Road, Ottawa, ON, Canada K1L 6E8, has released the first two volumes in a series of books about Canadian military aircraft, vehicles, and ships. CF-104 Starfighter and CF-101 Voodoo are both by Robert McIntyre with color renderings by Graham Wragg



and line drawings by Bob Migliardi. Each 52-page, horizontal-format, soft-cover book contains approximately 150 photos, 4 pages of color renderings, and drawings of aircraft details. The text and captions provide a brief history of each aircraft in Canadian service and include a report by the author on a flight in the aircraft.

The books are available from the publisher for \$7.95 each plus \$2.00 postage.



#### U. S. Infantry — Vietnam

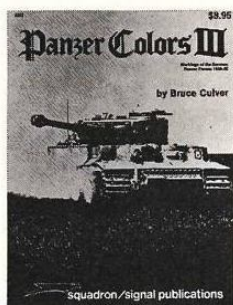
This 50-page, 8 1/2" x 11", horizontal-format, soft-cover book by Jim Mesko with drawings by Amy Harroff contains 106 black-and-white photos (most official U. S. Army), 14 color renderings, and 31 black-and-white drawings. The photos and color drawings show U. S. soldiers in the field in Vietnam from about 1965 to about 1970; the black-and-white drawings show infantry weapons and uniforms. The text provides a concise description of U. S. Army operations in Vietnam.

The book is published by Squadron/Signal Publications, Inc., 1115 Crowley Drive, Carrollton, TX 75011-5010; the price is \$4.95.

#### Panzer Colors III

The third volume in Bruce Culver's study of German military vehicle camouflage and markings from 1939 through 1945 covers the major units that were not part of the Heer (Army) Panzer Division establishment. These include Panzergrenadier Divisions, Waffen Panzer Divisions, Tiger tank





battalions, and Sturmgeschutz (assault artillery) formations.

The text provides a brief history of each unit and discusses its markings. There are 239 black-and-white photos and 16 pages of color drawings by Don Greer that show armored vehicles and unit markings. The 96-page, 8½" x 11", soft-cover book is published by Squadron/Signal Publications; the price is \$8.95.



#### Tanks Illustrated

Stackpole Books, Cameron and Kelker Streets, P. O. Box 1831, Harrisburg, PA 17105, distributes an interesting series of picture books about armored fighting vehicles. Each 7¼" x 9¾", soft-cover volume contains more than 100 black-and-white or color photos, has 64 to 72 pages, and sells for \$7.95. There is no text except an introduction and photo captions.

Recent additions to the line are 7. *German Tanks, 1945 to the Present* by Peter Gudgin; 8. *US Battle Tanks Today* by Steven J. Zaloga and Michael Green; 9. *Last of the Panzers: German Tanks, 1944-45* by William Auerbach; and 10. *D-Day Tank Battles: Beachhead to Breakout* by George Balin.



#### Colors & Markings of the F-106 Delta Dart

The first volume in Bert Kinzey's Colors and Markings series, this 8½" x 11", 64-page, soft-cover book contains 195 photos (65 in color) that show the markings worn

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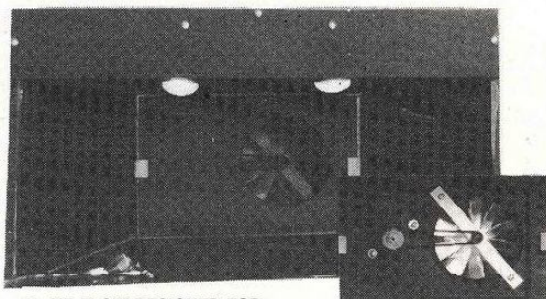
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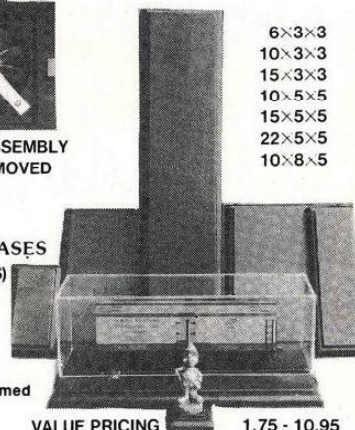
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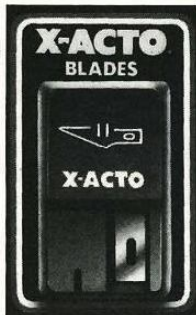
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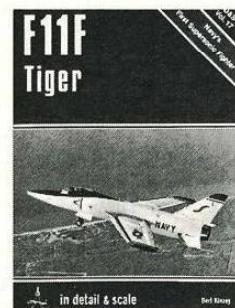
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by all USAF and ANG units (and NASA) that have flown the F-106. The front cover features a painting by John Clark of an F-106 in flight.

The book is published by Aero Publishers, Inc., 329 West Aviation Road, Fallbrook, CA 92028; the price is \$9.95.

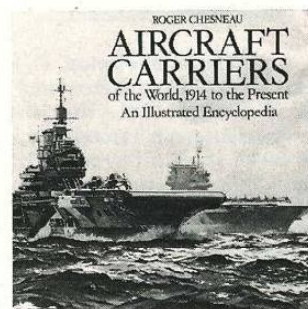


### F11F Tiger in Detail & Scale

Grumman built only a few hundred F11F Tigers for the U. S. Navy in the mid-1950s, but this handsome plane was the Navy's first supersonic fighter and the first to feature an "area rule" fuselage (the cross section of the fuselage where the wings join was reduced by an amount equal to the area added by the wings, reducing drag).

Bert Kinzey's 8½" x 11", 72-page, soft-cover volume on the F11F contains 191 photos (30 in color), 1/72 scale five-view drawings, kit and decal reviews, and a concise history of the Tiger's development.

The book is published by Aero Publishers, Inc.; the price is \$7.95.



### Aircraft Carriers of the World, 1914 to the Present

This 288-page, 9¼" x 10", hard-cover book by Roger Chesneau is an illustrated encyclopedia of all the aircraft carriers that have served in the world's navies, as well as several important designs (such as the *United States*) that were never built. There are 300 black-and-white photos and 200 drawings.

Each ship or class of ship receives one or more photos, a table of specifications, design description, and service notes. An index of ship names makes the book even more useful.

The book is published in the U. S. by Naval Institute Press, Annapolis, MD 21402; the price is \$27.95.

### Color Charts

Jerry Smith has issued two more 4-page, 5½" x 8" charts: No. 8404, "F-16 Production Colors, USAF, NATO," and No. 8405, "Israeli Air Force Colors." The charts contain drawings of one or more airplanes and a brief description telling how each color scheme is used. Each also includes four 1½" x 1½" chips cut from 3" x 5" Federal





Standard color cards, as well as references.

The charts are published by Modeler's Journal Publications, 526 Penstock Drive, Grass Valley, CA 95945. The price is \$1.25 each plus 25 cents postage for the first chart and 10 cents postage for each additional chart.



#### B-17 in Action

A recent addition to Squadron/Signal Publications' series of aviation books, this 8 1/4" x 11", 58-page, horizontal-format, soft-cover book by Larry Davis with illustrations by Don Greer contains 103 black-and-white photos, 87 line drawings, and 14 color renderings. The price is \$4.95.

There are descriptions of all major B-17 variants. Many of the photos show the planes in flight during bombing raids in Europe from 1943 through 1945.



#### U. S. Bombers, 1928 to 1980s

The fourth edition of this basic reference work by Lloyd S. Jones is a soft-cover, 7 1/4" x 10 3/4", 280-page book with 269 black-and-white photos and 75 three-view drawings of aircraft. The text describes 75 bombers (including several that were never built, "blueprint bombers"), ranging from the Keystone XB-1 Super Cyclops through the Rockwell International B-1. This edition includes data on several contemporary cruise missiles, including the Boeing AGM-86B and the General Dynamics AGM-109.

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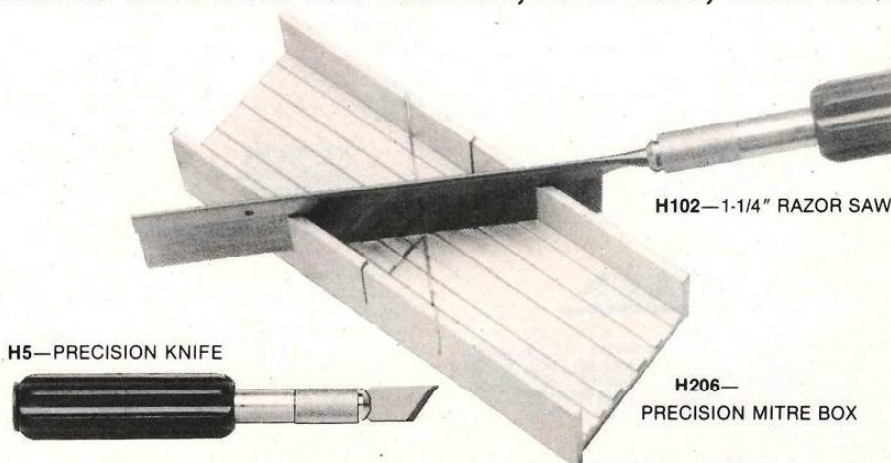
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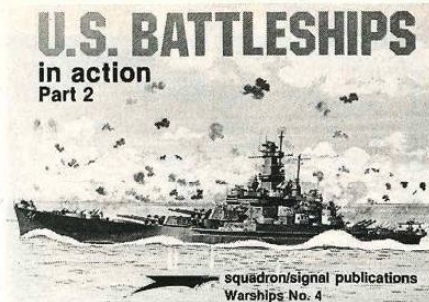
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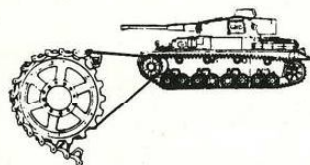


### U. S. Battleships in Action, Part 2

Written by Rob Stern, with 16 drawings by Kevin Wornkey and 6 color renderings by Don Greer, this 50-page, 8 1/4" x 11", horizontal-format, soft-cover book contains 112 photos, most of which show *North Carolina*, *South Dakota*, and *Iowa*-class battleships during World War Two, nearly always while escorting fast carriers or bombarding coastal areas. A few photos show *Iowa*-class battleships during the Korean War and later. There are several photos of the *New Jersey* taken before and after her 1982 recommissioning.

Stern points out that an *Iowa*-class battleship can fire 210 tons of 16-inch rounds in 9 minutes and that each shell can penetrate 30 feet of concrete.

The book is published by Squadron/Signal Publications; the price is \$4.95.



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Each of the soft-cover books is 7 1/2" x 9 1/2", has between 120 to 200 black-and-white photos (including many detail shots), and contains a bibliography and list of enthusiasts' clubs. The books range in length from 136 to 176 pages; each is \$13.95.

### Harrah's Automobile Collection

Written by Dean Batchelor with photos by John Lamm, this 264-page, 9" x 11 1/4", hard-cover book is published by GP Publishing Inc. of Pontiac, Michigan, and distributed by Motorbooks International; the price is \$39.95.

There are 275 photos (164 in color) of automobiles, motorcycles, and other art.

More Book Briefs on page 70

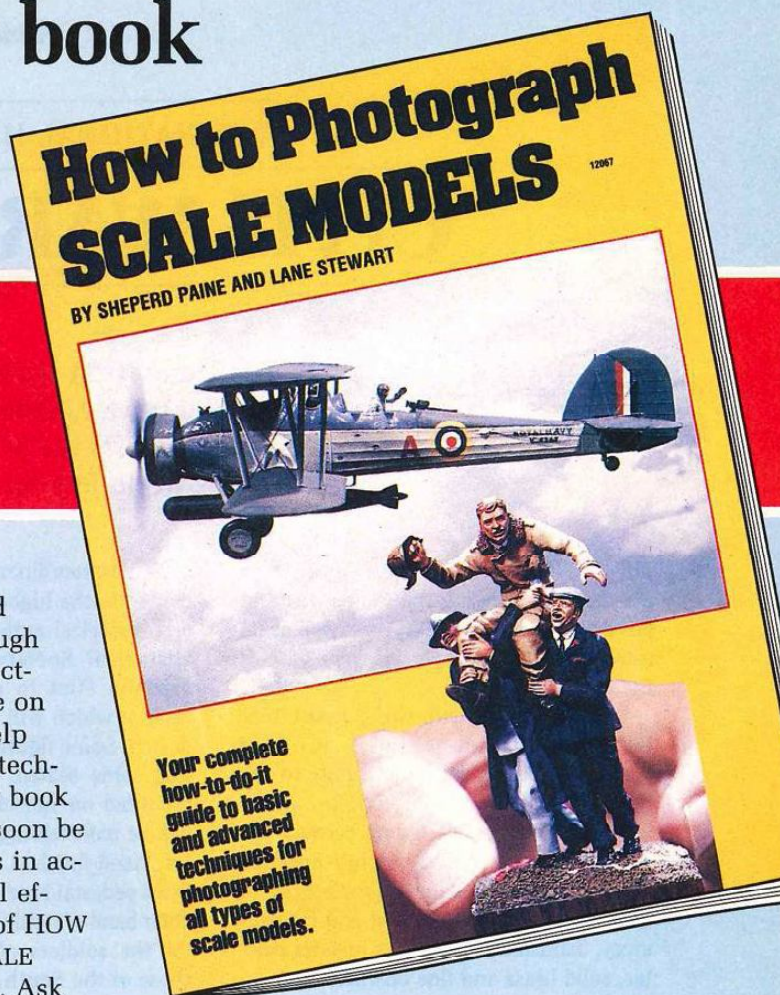
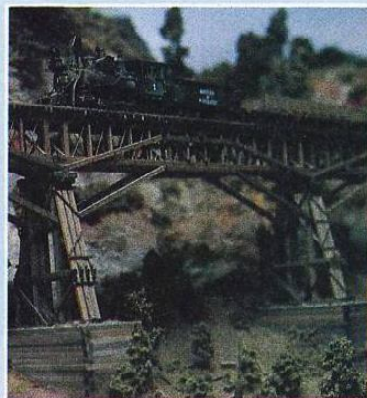


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THE NATIONAL HISTORICAL SOCIETY

# CIVIL WAR CHESS SET



Richly detailed portrait sculptures of great American heroes  
—in solid pewter, solid brass and fine enamels.

A heirloom chess set to be enjoyed for generations.

Created by the world-famous craftsmen of The Franklin Mint.

THE NATIONAL HISTORICAL SOCIETY is dedicated to bringing the excitement and power of American history—as well as its significance—to people in every part of the land.

It is in keeping with this purpose that the Society is about to issue its own Civil War Chess Set. A dramatic tribute to the heroes of both North and South—and a work all the more intriguing because the playing pieces include richly detailed three-dimensional *portrait sculptures* of the great Generals of Union and Confederacy, captured for the ages in solid pewter, solid brass and fine enamels.

This extraordinary new chess set will be crafted to the highest standards of quality and historical authenticity. The National Historical Society has appointed The Franklin Mint to create the sculptures, each of which will be a new and original design. Some figures will be shown standing, some seated, some kneeling, some mounted on horseback. And each figure will be painstakingly crafted of solid pewter, hand-finished, then set atop a solid brass pedestal base embellished with a circular band of richly colored enamel—*blue* for the soldiers of the North, *gray* for those of the South.

Every sculpture, moreover, will be so rich with authentic detail that only the artists and master craftsmen of The Franklin Mint, steeped as they are in the tradition of *precision coinage*, could have achieved it. Indeed, every nuance of facial expression, uniform and weaponry—right down to the buttons, braiding, sabers and carbines—will be depicted with meticulous accuracy.

Thus, The National Historical Society Civil War Chess Set is also a magnificent collection. A triumphant achievement of portrait sculpture—and the ultimate in micro-detailed miniaturization.

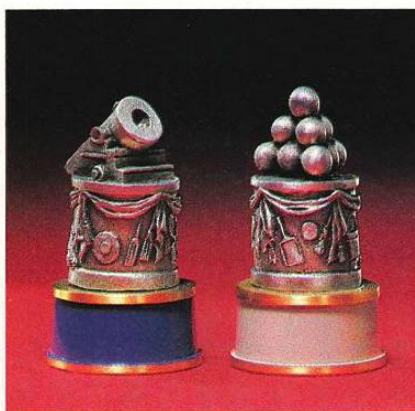
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Available only by direct subscription. Issue Price: \$17.50 per sculptured chess piece.  
Limit: One complete set per subscriber. Please enter your subscription by February 28, 1985.





This handsome pewter-finished chessboard and fitted presentation case will be provided as part of the set.

### A dramatic showpiece for your home or office

The chessmen themselves are scaled so that each one will suit the function assigned to it in the game of chess. And the handsomely crafted, pewter-finished playing board has been sized with equal care. Specially fitted, to also serve as the cover for the case which will house all 32 playing pieces, the board completes a presentation so attractive that the chess set will be played and displayed with pride and satisfaction. A Certificate of Authenticity, and specially written reference materials, will also be provided.

Exhibited on a table or cabinet in your living room, family room, den or office, this is a possession certain to evoke both admiration and respect from all who see it. A unique tribute to unique Americans. A work of heirloom quality, that will bring you endless pleasure through the years. And a chess set eminently worthy of being passed on from generation to generation.

The subscription rolls are now open. The work may be obtained *only* by direct subscription, with a limit of one complete set per subscriber.

The chessmen will be issued to you at the attractive price of \$17.50 each, with the specially designed playing board and protective case provided at no additional charge. As a subscriber, you will receive two sculptured pieces every *other* month. You will, however, be billed for only *one* chessman at a time—a total of just \$17.50 per month. In addition, you will have the option to complete your set earlier, if you wish—but you will be under no obligation to do so.

Here, then, is a work that will bring lasting pleasure to chess enthusiasts, history buffs, collectors of military miniatures—to anyone who appreciates our nation's heritage. Indeed, it is an unmistakably American chess set, that will make a dramatic addition to any room. And an exciting showpiece that will be displayed, enjoyed and treasured by each succeeding generation.

To acquire The National Historical Society Civil War Chess Set, no advance payment is required. But please note that the accompanying Subscription Application is dated and should be returned postmarked by February 28, 1985.

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### SUBSCRIPTION APPLICATION

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*Please mail by February 28, 1985.*

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c/o The Franklin Mint  
Franklin Center, Pennsylvania 19091

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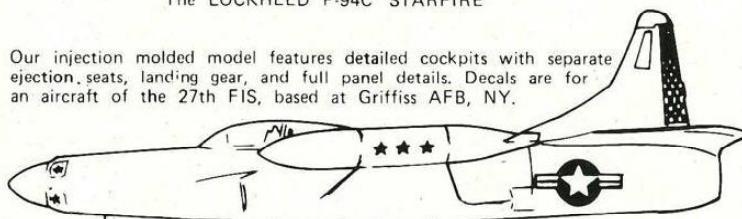
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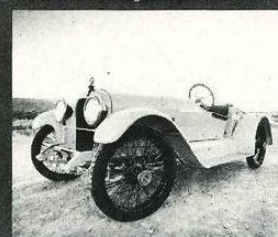
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## Harrah's Automobile Collection

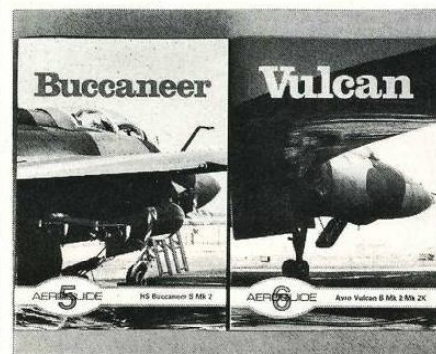
One man's tribute to the great automobiles of the World.



By Dean Buschler with photography by John Lamm  
Foreword by Phil Hill and introduction by Clyde Hale

facts that belonged to the Harrah Automobile Collection in Reno, Nevada, at the time of Bill Harrah's death on June 30, 1978. The text describes how Harrah founded and operated the Automobile Collection and a special section provides brief descriptions and large color photos of more than 50 cars, several motorcycles, and a Ford Tri-Motor.

There is a list of 1,453 autos (ranging from an 1892 Panhard and Levassor Voiturette to a 1975 Prudhomme Funny Car) and other vehicles in the Automobile Collection and an index.



### Aeroguides

Roger Chesneau and Ray Rimmell have produced two more titles in the Aeroguide series of picture books about contemporary British military aircraft. The latest volumes are No. 5 on the HS Buccaneer S Mk 2 and No. 6 on the Avro Vulcan B Mk 2/Mk 2K. Four earlier volumes have covered the Hawk, Jaguar, Sea Harrier, and Tornado.

Each is a 32-page, 8 1/4" x 11 1/4", soft-cover book with approximately 70 black-and-white photos, scale drawings, and information about markings and camouflage patterns. A painting on the back cover shows one color scheme.

Published in England by Linewrights Ltd., the books are now available in the U. S. from Aeolus Publishing Ltd., P. O. Box 2643, Vista, CA 92083; each is \$6.95 including postage.

### California's Railway Guns

Charles S. Small's 88-page, 8 1/2" x 11", soft-cover book on U. S. Army and Navy railway guns, primarily coastal defense cannons in southern California in the 1930s and 1940s, contains 13 black-and-white photos, 26 drawings, and 16 maps. The text includes descriptions of several guns and Keith F. Cordrey's report of how he super-

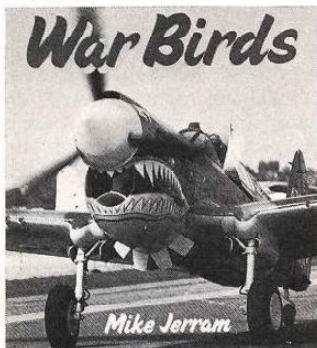


## CALIFORNIA'S RAILWAY GUNS



vised test firings of 14" railway guns in California in 1933 and 1937.

It is published by Railhead Publications, P. O. Box 526, Canton, OH 44701; the price is \$14.95.



### War Birds

This 128-page, 8 1/4" x 9", soft-cover book by Mike Jerram contains 120 color photos, most of which show immaculately restored WWII military aircraft, including Mustangs, Bearcats, Warhawks, Corsairs, Spitfires, and Texans. Many of the planes are shown in flight, most often at Oshkosh, Wisconsin, or Harlingen, Texas. Each photo has a caption but there is no other text.

Published by Osprey Publishing Limited, it is distributed in the U. S. by Motorbooks International; the price is \$11.95.



### Modern Military Aircraft and their Markings, No. 1: Canadian Armed Forces

This 32-page, 8 1/2" x 11", soft-cover volume is the first in a planned series of picture books. It contains 86 black-and-white photos, most by Douglas and Philip Tachauer, of contemporary Canadian Armed Forces airplanes and helicopters. There is a caption for each photo but no other text.

The book is published by Douglas R. Tachauer Aviation Publications, 1608 Robil-

lard Road, Mississauga, ON, Canada L5J 3K7. The price is Can\$5.95 each plus Can\$1.90 postage for the first book and 80 cents for each additional copy. Payment must be made by International Money Order in Canadian funds.

## ITALIAN AIR FORCE CAMOUFLAGE IN II WORLD WAR



### Italian Air Force Camouflage in II World War

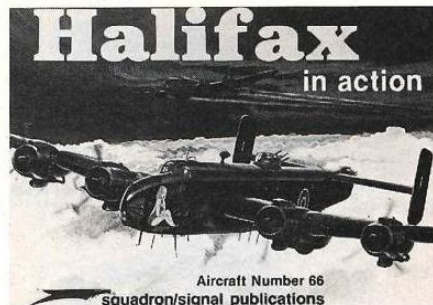
Nino Arena is the author of this 108-page, 8 1/2" x 10 1/2", soft-cover book that contains 227 black-and-white photos of Italian military aircraft from the mid-1930s through 1944. The captions are in both Italian and English.

The text (in English) discusses such topics as camouflage patterns, national insignia, and unit and rank markings as these were applied to aircraft.

A 26 1/2" x 39" poster containing 9 color renderings of Italian WWII aircraft and

printed color samples (with Federal Standard numbers) is included.

The book is published by Mucchi Editore s.r.l., Via Emilia Est, 1527, 41100 Modena, Italy; the price is Lit (lira) 20,000.



### Halifax in Action

This 50-page, 8 1/4" x 11", horizontal-format, soft-cover book by Jerry Scutts contains 106 black-and-white photos, 4 pages of color paintings (including covers) by Don Greer, and 44 line drawings of aircraft details by Kevin Wornkey. The text covers all versions of the Handley Page Halifax, which served primarily as a bomber but also as a troop carrier, glider tug, and maritime reconnaissance aircraft.

The book is published by Squadron/Signal Publications; the price is \$4.95.

### North American Valkyrie XB-70A

North American built two XB-70A bombers in the early 1960s. The XB-70A-1 first

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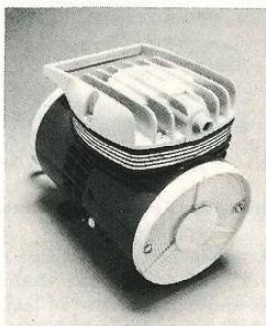
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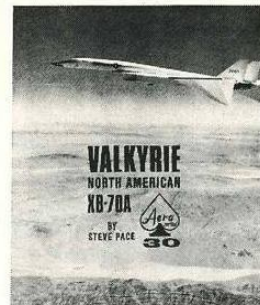
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## PAINTS

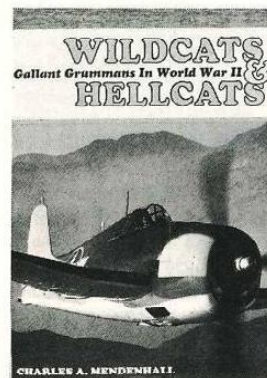
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flew on September 21, 1964, and made 83 flights before being retired to the Air Force Museum in February 1969. The XB-70A-2 made 46 flights and was lost in a midair collision with one of its chase planes on June 8, 1966. Intended as a replacement for the B-52, the plane was designed for a top speed of Mach 3 and could carry a payload of 50,000 pounds. No contracts were awarded for production versions.


Steve Pace's history of the B-70 project is a 7¼" x 10¾", 104-page, soft-cover book with 138 photos (22 in color), 31 drawings, and many tables and charts. There is an annotated bibliography. It is published by Aero Publishers, Inc.; the price is \$8.95.



## Wildcats & Hellcats

Charles Mendenhall's 8½" x 11", 160-page, soft-cover volume on the Grumman Wildcat and Hellcat contains 121 black-and-white photos that show every variant of these famous aircraft. The text discusses such topics as the design philosophies that inspired the planes, their service with the Navy and Marines in the Pacific, and the combat experience of such pilots as Joseph Foss and Edward O'Hare.

It is published by Motorbooks International; the price is \$14.95. **FSM**



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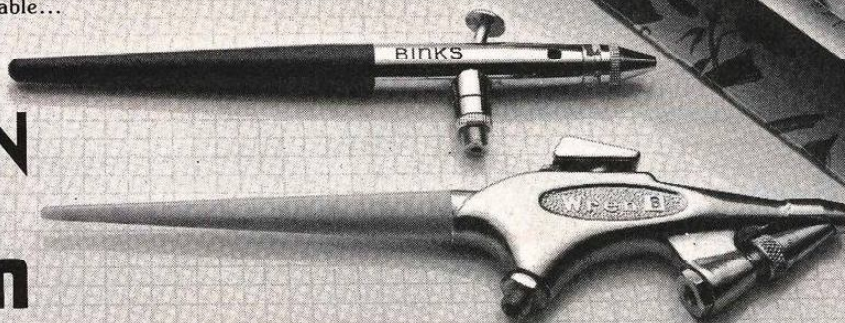
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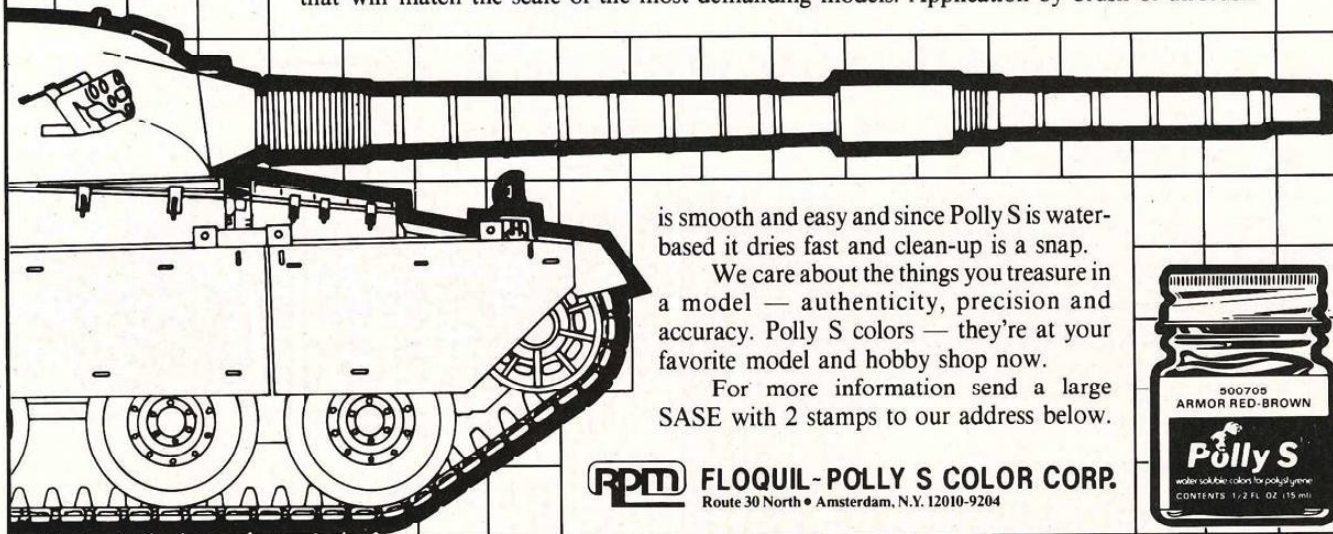
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Conducted by Paul Boyer

**What radar mount?** In Geoffrey Pearce's  
article "Superdetailing Hasegawa's 1/72  
scale F-14A Tomcat" (September/October  
1984 FSM), he mentions using the radar  
mount from Monogram's 1/72 scale F-15  
Eagle kit. I have Monogram kit No. 5434  
and there is no radar in it at all. Could you  
please explain? *Chris Sprague*



## F-15 STRIKE EAGLE



Geoff used Monogram's F-15A Eagle kit  
(No. 7580, top) which is no longer in produc-  
tion. The kit you have is the new Strike  
Eagle (F-15E, bottom) which was produced us-  
ing many of the molds used in the F-15A kit,  
but not the forward fuselage with its radar  
assembly. Monogram made a revised, two-  
seat forward fuselage, along with new weap-  
ons, canopy, and other details for this later  
kit. *Paul Boyer*

**Mountain Minitanks.** I used to be as-  
signed to a U. S. Army unit equipped with a  
120 mm AAA battery. I know ROCO Mini-  
tanks makes an HO scale model of this  
weapon, but I haven't been able to find one  
here in the Denver, Colorado, area. Do you  
have any sources? *Nelson Pickett*

You should be able to find a good selection  
of Minitanks at Colorado Hobbies, 10 South  
Havana, No. 108, Aurora, CO 80012. If they  
don't have what you're looking for, try A.  
Kempees, Hensyn Village, Q-4A, Budd  
Lake, NJ 07828, or AAA Hobbies, Dept. FS,  
P. O. Box 2908, Cherry Hill, NJ 08034.  
*P. B.*

**Napoleonic figures.** I enjoyed Airfix's  
1/72 scale Napoleonic figures, but I can't  
find them anymore. Are any metal Napole-  
onic figures available? *Jose Azzari*

No, unfortunately I know of no metal Na-  
poleonic figures in 1/72 scale (25 mm). How-  
ever, if you're willing to change scale to  
54 mm, Historex makes the most complete  
line of Napoleonic figures available. Try  
Santos Miniatures, P. O. Box 4062, Harris-  
burg, PA 17111, or The Soldier Centre, P. O.  
Box 38, West Roxbury, MA 02132, for a  
price list and catalog. *Bob Knee*

**Figure questions.** What are the best col-  
ors to use to simulate a black person's skin  
on a figure? Also, where can I find Renais-  
sance-era figures? *Matthew McCarthy*

Of course, there are many different colors  
of black skin, so I'll suggest how to paint a  
dark skin and add hues to make lighter  
tones. An important prerequisite is a proper  
undercoat after priming. I use Polly S No.  
1426 Kobald Red/Brown or No. 1427 Ogre  
Dark Brown for the undercoat. For a base  
coat, I use Winsor & Newton oils burnt um-  
ber overall. For dark shadows I blend in ul-  
tramarine blue with a bit of Mars violet (the  
violet can be omitted if you choose). For  
added warmth or "blush" in the cheeks,  
blend in cadmium red. I blend Naples Yel-  
low for highlights. For lighter hues, mix  
burnt sienna and a bit of flesh color tint.  
Skin tones are subjective, but these recom-  
mendations should give you a starting  
point.

Renaissance figures are available from  
The Red Lancer, 324 South Front Street,  
Milton, PA 17847, or try The Soldier  
Centre. *Bob Knee*

**Paint problems.** I enjoyed Roscoe Creed's  
"Old Silver is solid gold" in the March/April  
1984 FSM, and I have a similar airbrush  
setup. I first experimented with my new air-  
brush using thinned India ink and was able  
to obtain a line about 1/16" wide. However,  
when spraying Testor Model Master paint I  
can achieve, at best, a line no smaller than  
1/4". What would you recommend for a thin-  
ning ratio for Testor paints? Also, is your  
recommendation of 50/50 Old Silver to Dio-  
sol the proper ratio for all Floquil and Polly  
S paints? *Dennis Blake*

Unfortunately, I haven't had much luck  
with Testor Model Master paints, although I  
know other modelers who obtain excellent  
results with them. I thinned mine 50/50  
with Testor Model Master Airbrush Thinner  
and got a rough finish. Perhaps this is  
an incorrect ratio, but I haven't had time to  
experiment with them further.

My 50/50 Old Silver/Dio-Sol ratio is not  
necessarily the ratio to use for all Floquil  
paints. Experimentation is the best way to  
find out what's best for your airbrush, paint,  
and modeling environment. Of course Polly S  
paints should be thinned with water, dena-  
tured alcohol (not isopropyl "rubbing" alco-  
hol), or a mix of the two. Whatever thinner  
you use with Polly S, it should be used only  
in quantities that allow the thick paint to be  
pulled through the airbrush. If you thin  
Polly S too much, its tough surface and abil-  
ity to adhere to plastic are drastically  
reduced. *Roscoe Creed*







**Paint mixing.** What's the best way to mix paint and thinners?  
Dan Heath

I use plastic Kodak 35 mm film canisters for mixing my paint. For measuring, I use an eyedropper (available at drugstores) and record the amounts of paint and thinner used — if I find that a certain combination is too thick or too thin, I refer to my notes to avoid repeating the mistake.

I also record amounts of each color used when I mix paint to come up with a color not commercially available. For example, I may use ten eyedroppersful of Floquil Primer and add five drops of Reefer Yellow to come up with Light Gull Gray. If it's too yellow I'll add two more eyedroppersful of Primer. If you're mixing a new color, always use the same brands of paint for compatibility and consistent results.

After getting the color I want, I thin two parts paint to one part thinner — this is just a starting point; different paints will need different ratios, so experiment to find what



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is best. Then I transfer the paint into the airbrush paint cup or bottle. I rarely keep leftover thinned paint; replacing this into a paint bottle sometimes contaminates the remaining paint and accelerates its tendency to separate and dry. If I haven't made enough paint, I just refer to my notes and whip up a new batch. **P. B.**

**Missing parts.** Can you tell me who to contact regarding missing or poorly formed parts in Matchbox kits? **Bill Werback**

Your first stop should be at the store where you purchased the kit. If you haven't done any work on the kit, your dealer should accept the defective kit in trade for another one. Open the new kit while you're in the shop to make sure it doesn't have the same problem. If your dealer can't help, write the North American distributor for Matchbox kits: Irwin Toy Ltd., 165 North Queen Street, Etobicoke, ON, Canada M9C 1A7. Describe your problem and return defective parts for exchange. If a part is missing, be prepared to send the rest of the kit for exchange. It's always a good idea to check every kit for missing parts before you start working on it. Some dealers and manufacturers won't accept partially built or painted kits in exchange. **P. B.**

**Sea Stallion kits.** I was attached to the Airborne Mine Countermeasure Squadron, HM-12, in the 1970s. I would like to have a model of the Sikorsky CH-53 helicopter that we used. Are there any models of it? **Jim Reynolds**

The CH-53 has recently been produced by Revell in 1/48 scale (kit No. 4511) and in 1/72 scale by MPC/Airfix (No. 4401) and Fujimi (Nos. 7A32, 7A33, and 7A34). The Fujimi kits differ in markings; U. S. Air Force, Marines, and Navy respectively. You should be able to find them at your local hobby shops. If you can't, ask the owner to order the kits for you. In any case, you should be able to get them through Squadron Mail Order, 1115 Crowley Drive, Carrollton, TX 75011-5010. **P. B.**

**Vac-U-Form extinct?** I've looked high and low for the Mattel Vac-U-Form machine. Modelers who have them say they got them at garage sales, but I've had no luck. I don't see any for sale in ads in IPMS/U. S. A. *Update* either. How can I get one? **Nick Dragone**

The Mattel machine was a toy made in the early '60s and is hard to find. The best way to get one is to place an ad in IPMS *Update* or FSM's classified section rather than to look for ads by people selling them. I had good luck doing this when I was trying to find a rare kit; several people offered the kit I was seeking for little more than the original box price. Of course, one fellow wanted way too much, but I had a choice of who I could buy from.

I would suggest you word your ad like this: "WANTED: Mattel Vac-U-Form machine in good working condition. Name price in first letter." I think the going price is about \$25.00, but I've seen people asking as much as \$50.00. **P. B.**

**FSM**

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(Required by 39 U.S.C. 3685)

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## An FSM Staff Report Modeling Clubs

This special report was compiled from information provided by modeling clubs in the United States and other countries in response to our requests in the May/June and September/October 1984 issues of FSM. We plan to publish a list of modeling clubs annually, so please send us information about your club.

### CALIFORNIA

American Aviation Historical Society, 2333 Otis Street, Santa Ana, CA 92704. Annual dues: \$25.00 in U. S. and Canada, \$30.00 in other countries. Quarterly publications: The *Journal* contains articles on aviation history, while the *Newsletter* provides news of meetings, reunions, chapter activities, and symposia.

Bargains Galore, 163 West La Habra Boulevard, Box 3151, La Habra, CA 90631. Monthly newsletter and annual catalog. Send a long, stamped (37 cents' worth), self-addressed envelope for a sample newsletter and information packet. Area of interest: Bargains Galore says it is "a mail-order modeling club."

IPMS Space Park, c/o E. Richard Staszak, 4415 Newton Street, Torrance, CA 90405. Quarterly publication: *The Replica Wrap-up*; subscriptions cost \$5.50 for four issues.

### DISTRICT OF COLUMBIA

IPMS Washington, D. C., c/o Bruce Simard, 9546 Muirkirk Road, No. 302, Laurel, MD 20810. Meetings: third Tuesday of each month, Colmar Manor Municipal Building, 3701 Lawrence Street, Colmar Manor, Maryland. Quarterly publication: *Pri-Fly*.

### FLORIDA

Manatee Scale Modelers, c/o Michael C. Peed, 314 15th St. Court West, Bradenton, FL 33505, or Dan Cychotte, Semaphore Hobby Shoppe, 1838 14th Street West, Bradenton, FL 33505. Monthly newsletter: *The Manatee Modeler*. Areas of interest: aircraft (especially the F-16 Fighting Falcon), armor, vehicles, and figures.

Tampa Scale Modelers: Suncoast Military Miniatures Association, c/o William Hogan, 14707 Carnation Drive, Tampa, FL 33612. Monthly publication: *The Regimental Journal*. Areas of interest: aircraft, armor, ships, and military miniatures.

### HAWAII

IPMS U. S. S. Arizona, 1650 Lehia Street, Honolulu, HI 96818. Bimonthly publication: *IPMS-Hawaii*; subscriptions cost \$4.00 per year for Hawaii residents, \$5.00 for remainder of U. S., and \$6.00 overseas.

### ILLINOIS

IPMS/Chicago Sprue Stretchers, 5240 West Waveland Avenue, Chicago, IL 60641. Meetings: 8:00 p.m. every Friday, second floor of Independence Park Fieldhouse, 3945 North Springfield Avenue, Chicago. Bimonthly magazine: *Plastic Novelty Items*; subscriptions cost \$9.60.

Military Miniature Society of Illinois, P. O. Box 394, Skokie, IL 60077. Bimonthly publication: *The Scabbard*; subscriptions cost \$10.00.

### MASSACHUSETTS

Military Collectors of New England, 289 Union Street, Holbrook, MA 02343.

### MICHIGAN

IPMS Livonia, c/o Stewart W. Bailey, 16621 Negaunee, Redford, MI 48240. Biannual publication: *Plastic Post*, \$1.00 per copy.

Michigan Society of Figure Collectors, c/o Bill Marshall, 917 North Terrace Lane, Ypsilanti, MI 48197.

Yankee Air Force, P. O. Box 1100, Ypsilanti, MI 48197. Areas of interest: This group has an operational C-47 transport, as well as several military training and fighter aircraft on display. In its hangar are a library and several rooms devoted to specific periods of aviation history.

### MISSOURI

Gateway Chapter IPMS, P. O. Box 685, Manchester, MO 63011. Annual dues: \$7.50. Meetings: 7:30 p.m. second Monday of each month, community room of Farm & Home Savings and Loan, 11710 Manchester Road, Des Peres, Missouri. Monthly newsletter: *The Arch Scale News*. Quarterly magazine: *Crazed Plastic*; subscriptions cost \$6.00.

IPMS Heart of America, c/o Bill Pettyjohn, 1206 Warren Avenue, Topeka, KS 66604. Meetings: first Tuesday of each month, Papenfus and Son Hardware, 12012 New East U. S. Highway 40, Independence, Missouri.

### NEBRASKA

IPMS Fort Crook, P. O. Box 813, Bellevue, NE 68005. Dues: \$10.00 for non-IPMS members, \$8.00 for IPMS members, and \$5.00 for junior members. Newsletter: *The Crooked Line*; subscriptions for nonmembers cost \$6.00 in the U. S., \$9.00 overseas.

### NEW JERSEY

Fire Apparatus Model Builders Association, P. O. Box 749, Union City, NJ 07087. Dues: \$12.00. Bimonthly publication: *The Mini-Pumper*. Areas of interest: collecting and building plastic, die-cast, and toy fire apparatus.

### NEW YORK

IPMS Niagara Frontier, Box 61, East Amherst, NY 14051. Publication: *To the Point*.

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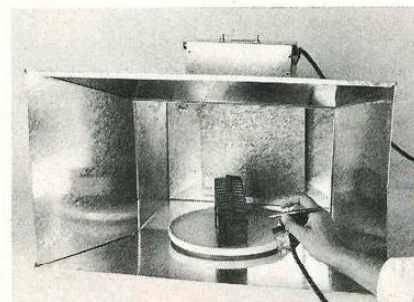
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## OHIO

Great Lakes Miniature Fire Apparatus Association, P. O. Box 633, Youngstown, OH 44501. Dues: \$6.00. Quarterly newsletter. Areas of interest: building and collecting scale fire apparatus models and miniatures.

Society of Northeast Ohio Area Rocketeers, c/o Chris Johnston, 26481 Shirley Avenue, Euclid, OH 44132. Monthly newsletter: *SNOAR News*. Areas of interest: model rocketry and space modeling, including plastic model conversions, scale and large rockets.

## OKLAHOMA

Oklahoma Historical Modelers Society/IPMS Central Oklahoma, c/o Don Douglas, 2520 Southwest 54th, Oklahoma City, OK 73119. Monthly newsletter.

## PENNSYLVANIA

Circus Model Builders, c/o Earl Schmidt, 485 Sleepy Hollow Road, Pittsburgh, PA 15291. Dues: \$17.50. Bi-monthly publication: *The Little Circus Wagon*. Areas of interest: building or collecting miniature models of circus equipment.

## RHODE ISLAND

Rhode Island Military Modeler Society, c/o Cliff Mathewson, 20 Welcome Road, Esmond, RI 02917. Monthly newsletter. Areas of interest: figure painting, armor, aircraft, and dioramas.

## TEXAS

Fort Worth Scale Modelers Society, c/o Griffin T. Murphy, D. D. S., 1124 South Lake Street, Suite D, Fort Worth, TX 76104. Dues: \$10.00 per year or \$1.00 per meeting. Meetings: 7:00 p.m. second Monday of each month, Dan Danciger Jewish Community Center, Old Granbury Road, Fort Worth. One-page quarterly bulletin.

## WISCONSIN

Milwaukee Military Miniature Modelers, c/o David R. Fisher, 6525 West Bluemound, Milwaukee, WI 53213. Dues: \$7.50.

## AUSTRALIA

Brisbane Scale Modellers, c/o H. R. Williams, 31 Arlington Street, Coorparoo, Brisbane Q.4151, Australia. Dues: \$10.00 Australian. Meetings: 7:30 p.m. second Wednesday of each month, 109 Edward Street, Room 3.3, Brisbane.

## CANADA

IPMS Calgary, 9408 Almond Crescent Southeast, Calgary, AB, Canada. Monthly magazine: *Modelword*.

London & District Plastic Modellers Society, c/o Dennis Glas, 1228 Hamilton Road, London, ON, Canada N5W 1B2. Meetings: 7:00 p.m. third Monday of each month, Boyle Community Centre, 530 Charlotte Street, London, Ontario.

## SOUTH AFRICA

IPMS Republic of South Africa, P. O. Box 37269, Overport Post Office, Durban 4067, Republic of South Africa. Quarterly publication: *IPMS RSA Magazine*. Overseas subscriptions: \$10.00 South African via surface mail, \$17.00 South African via airmail; payment by International Money Order. **FSM**

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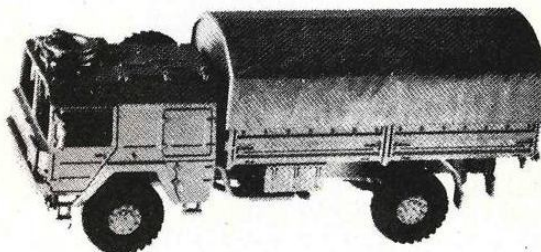
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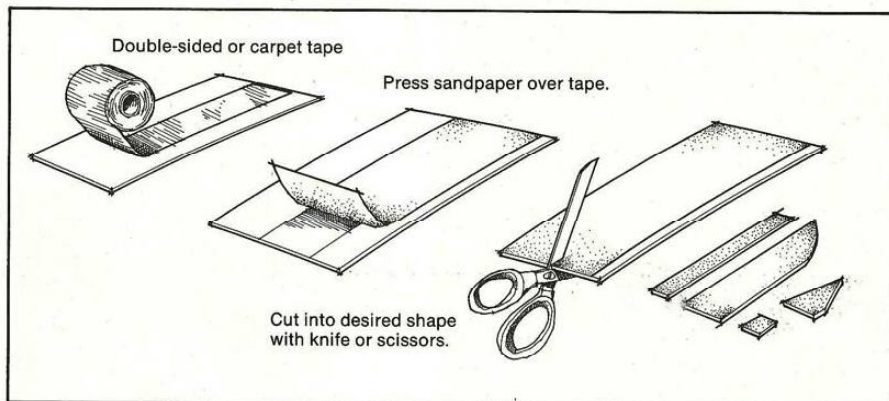
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enth Street, Milwaukee, WI 53233. Please  
enclose a stamped, self-addressed en-  
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for upon publication.

**Clear decal film.** Tired of having tape  
pull up your silver paint? Instead of mask-  
ing off a panel with tape and painting an-  
other color, paint a piece of clear decal film  
the color you need, trim it to the size you  
need, and apply as you would any decal.  
Clear decal film can also be used to protect  
silver paint on leading edges of wings and  
tailplanes of U. S. Navy jets.

*Bob Ferreira*



**Sanding blocks.** Here's a way to make  
sanding blocks to suit nearly every sanding  
situation. First, cut the top from a plastic  
foam egg carton and apply double-sided tape  
or carpet tape to one side. Next, lay sandpa-

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with a knife or scissors. Carpet tape holds  
the sandpaper even during wet sanding.

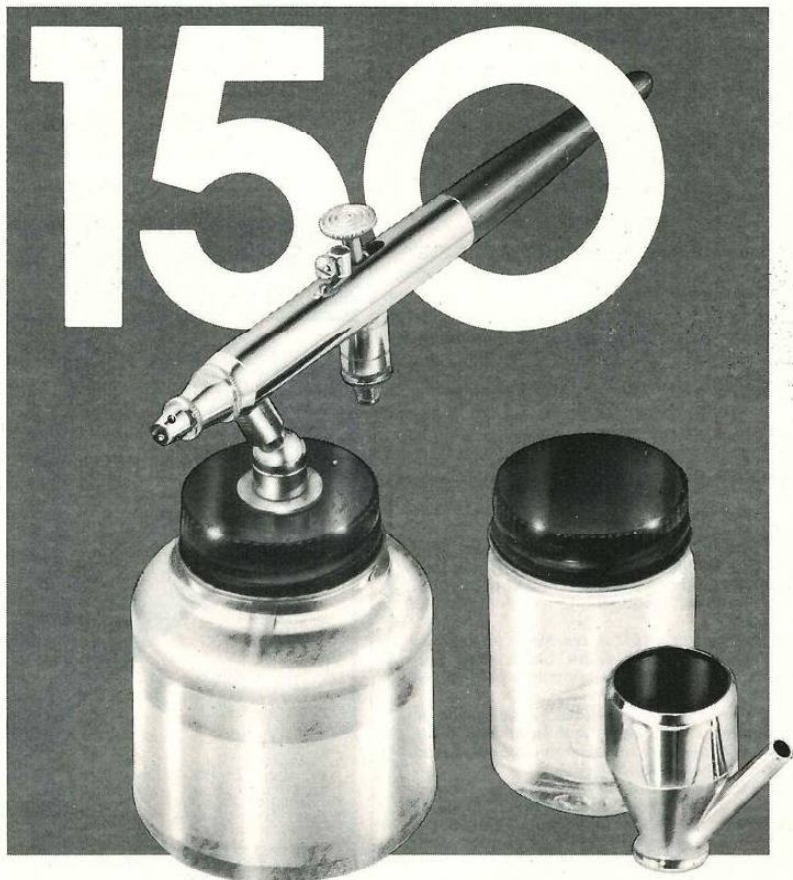
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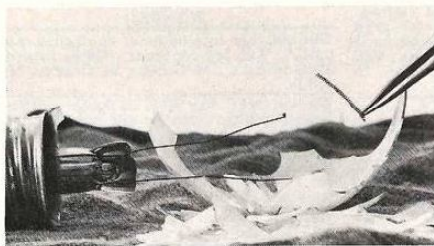
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MT125 (3025) Leopard  
MT126 (3026) Tiger I Ger Heavy Tank

MT129 (3029) Type 61 Jap Medium Tank  
MT130 (3030) Centurion Br Medium Tank  
MT131 (3031) US Sheridan M551 Tank  
MT133 (3033) Ger 8-Ton Semi Trk SDKFZ 7

MT135 (3035) US Tank Jackson  
MT138 (3038) M60A2 US Tank  
MT141 (3041) Armrd Pers Carr M113

MT144 (3044) T34/76 1942 Russian Tank  
MT145 (3045) Panz Kampfwagen IV Ausf II  
MT146 (3046) King Tiger Ger Heavy Tank  
MT147 (3047) Hunting Tiger Heavy Tank

MT152 (3052) Japanese Tank Type 74  
3054 M1 Abrams MBT

## 1/32 SCALE AIRCRAFT

6301 Grumman F-14A Tomcat

## 1/25 SCALE TANK SERIES (MOTORIZED)

DT108 (3208) Chieftain Br Medium Tank  
DT110 (3210) SU-100 Russian Tank Dest  
DTW111 (3311) Tgr I Ger Hvy Tnk Int Det  
DTR111 (4211) Tiger I  
DT114 (3214) Centurion Br Medium Tank

## 1/72 SCALE TORPEDO BOAT SERIES

PT7201 (7201) Vosper Fast Patrol Boat Perkasa  
PT7202 (7202) Japanese Torpedo Boat PT-15

## 1/350 SCALE SHIP SERIES

WS001 (7301) Bismark German Battleship  
WS002 (7302) Yamato Japanese Battleship  
WS003 (7303) Tirpitz German Battleship  
WS004 (7304) Musashi Japanese Battleship

**MRC**



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